

CENTENARY EDITION



SIR ISAAC PITMAN

PITMAN'S
FIVE MINUTE
SPEED TESTS



Z 56
PAC
1913

2/-

PITMAN'S
FIVE MINUTE SPEED
TESTS

FOR SPEED STUDENTS

PITMAN'S FIVE MINUTE SPEED TESTS. With an Introduction on the Acquisition of Speed by P. P. JACKSON, *Holder of Pitman's Speed Certificate at 210 Words per Minute*. This book contains 123 tests of miscellaneous matter, counted for rates of speed varying from 80 to 200 words per minute. Valuable advice on speed acquisition will be found in the Introduction. In crown 8vo, cloth, 240 pp. 2s.

PITMAN'S SPEED TESTS AND GUIDE TO RAPID WRITING IN SHORTHAND. Part I contains advice on the acquisition of speed by Messrs. R. J. GARWOOD, S. H. GODFREY, and W. F. SMART. Part II contains a series of speed tests of upwards of 1,000 words each, counted for dictation practice. In crown 8vo, cloth, 240 pp. 2s.

PITMAN'S REPORTING PRACTICE. A Manual of Dictation Exercises for the use of Shorthand Teachers and for Students, cultivating Speed in Short h. Contains 150 passages, including literary, commercial, and scientific subjects; market, company, and trade reports. The first half of the book is marked in 20's and the second in 30's. With introduction on the conduct of reporting classes. In crown 8vo, cloth. 2s. 6d.

PITMAN'S PROGRESSIVE DICTATOR. This work contains letters in ordinary print relating to twenty-seven different professions and trades, each selection being preceded by shorthand vocabulary and phrases of a progressive character. The counting is so arranged that each letter is available for various rates of speed. In crown 8vo, cloth. 2s. 6d.

PITMAN'S SHORTHAND CANDIDATE'S DICTATION EXERCISES. Contains a large number of original test pieces, specially compiled and arranged for dictation practice by shorthand writers in preparation for the leading examinations. In crown 8vo, cloth. 1s.

POCKET DICTATION BOOKS, Nos. 1, 2, 3, and 4. Containing speeches, etc., in ordinary print, counted in 10's for dictation. 2½ in. by 3½ in. Price each 2d.

ACQUISITION OF SPEED IN SHORTHAND. With Facsimile Notes of Famous Fast Writers of Pitman's Shorthand. Revised and Enlarged Edition. By E. A. COFF. In ordinary print. In crown 8vo. 8d.

SPEED TRAINING IN PITMAN'S SHORTHAND. By T. F. MARRINER, *Holder of Pitman's Certificate of 200 Words per Minute*. Contains a twelve weeks' Course, setting out a definite scheme of study and speed practice. 6d.

GRADUATED COMMERCIAL LETTERS FOR DICTATION. A companion book to *Pitman's Shorthand Commercial Course*, but adaptable for use with any of the phonographic text books. 8d.

Complete Catalogue of Shorthand Text-books post free
SIR ISAAC PITMAN AND SONS, LTD.

1 AMEN CORNER, LONDON, E.C.4

PITMAN'S FIVE MINUTE SPEED TESTS

A SERIES OF FIVE MINUTE SPEED TESTS MARKED
FOR DICTATION AT RATES VARYING FROM
80 TO 200 WORDS PER MINUTE

WITH AN INTRODUCTION BY

P. P. JACKSON, F.I.P.S.

Holder of Pitman's Speed Certificate for 210 words per minute

LONDON

SIR ISAAC PITMAN & SONS, LTD., 1 AMEN CORNER, E.C.4

BATH: PHONETIC INSTITUTE

MELBOURNE: THE PHONETIC INSTITUTE, COLLINS STREET

NEW YORK: 2 WEST 45TH STREET

TORONTO, CANADA

THE COMMERCIAL TEXT-BOOK CO.

OR

THE COPP, CLARK CO., LTD.

Z56

P495

1913

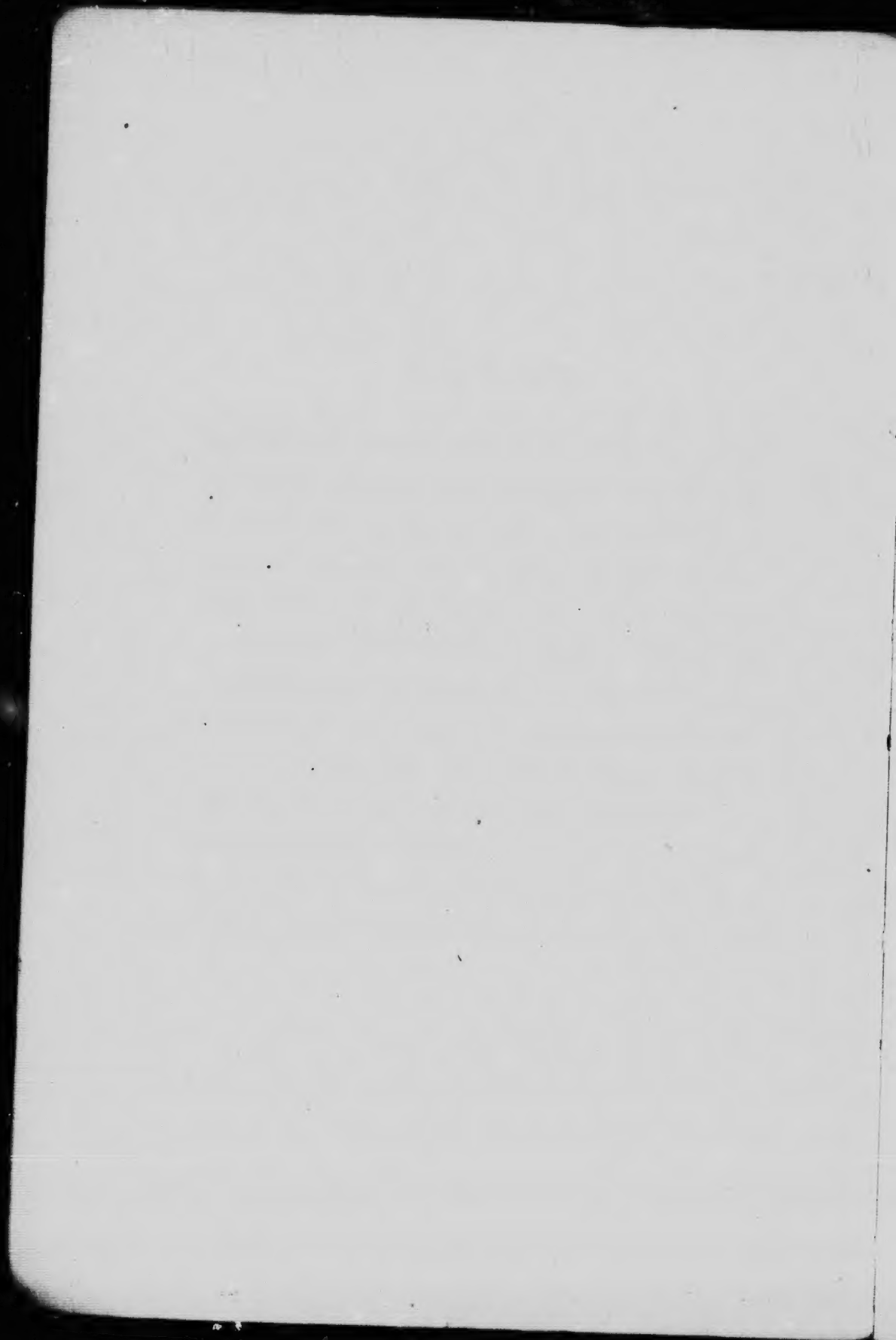
PRINTED BY SIR ISAAC PITMAN
& SONS, LTD., LONDON, BATH,
MELBOURNE AND NEW YORK

PREFACE

THE object of this book is to furnish teachers and speed students with a selection of suitable matter for dictation purposes. The passages, which are of varying difficulty, have been carefully selected, covering, as they do, a wide range of subjects; and it is confidently hoped that the book will be found very serviceable to all aspiring high-speed writers.

Each test is marked off in quarter-minute sections, at rates from 80 to 200 words per minute.

The Publishers beg to tender their thanks to the proprietors of the several newspapers and periodicals from which extracts have been made for their kind permission to include the passages in this work.



INTRODUCTION

HOW TO BECOME A FAST WRITER

BY PHIL. P. JACKSON

To acquire the ability to record, with faithfulness and comparative ease, the words of a rapid speaker, and to furnish a perfect transcript of the shorthand notes, should be the aim of everyone who embarks upon the study of Phonography. This ability is not gained without considerable effort or without some real hard work and close application, but those who have accomplished the task are in unanimous agreement that the effort is well worth while, and that the results will amply compensate the student for all the time and labour involved. Quite apart from the fascinating nature of the subject itself, a practical knowledge of Phonography is, by general consent, admitted to be an important factor in education, and one that is capable of placing its devotees and practitioners on a level of intelligence not reached by the study of any other single subject.

WHAT SPEED IS NECESSARY?

It is a great mistake to suppose—as some people unfortunately do,—that a speed of 80 words a minute is sufficient for shorthand writing. It is, indeed, almost useless for reporting purposes. In my opinion, 120 words a minute should be regarded as the minimum speed for practical purposes; and the student who has reached that stage should spare no effort to add very considerably to his note-taking ability, for by doing so he will augment very materially his wage-earning powers.

Some students may not have the muscular energy or the alertness of brain necessary to enable them to become *exceptionally* fast writers; but there is no reason why the average student of Phonography should not reach a speed of, at least, 140 or 150 words a minute, and a very large number

could attain to a much higher speed if they would only devote to study and practice the requisite amount of time, and would exhibit a little more determination than is observable in some quarters. A shorthand writer who can take down from dictation at the rate of 80 or 100 words a minute, and who has no special accomplishment in any other direction, is not in great demand; but the student who possesses sufficient enthusiasm and foresight to rise considerably above that level will have no difficulty in securing a remunerative position at any time.

THEORETICAL KNOWLEDGE.

It is, perhaps, hardly necessary to reiterate the statement that has been so often made, that if a really practical speed is to be reached, a sound knowledge of the theory of Phonography is absolutely essential, for it must be obvious to any intelligent mind that the writer who has not secured a thorough grasp of the rules which govern the formation of the phonographic symbols will never succeed in doing work of a useful and reliable character. The shorthand writers who excel in their profession are not those who were satisfied with a superficial knowledge of Phonography: they are those who set about their work in a methodical and enthusiastic manner, and were willing to go through the *Instructor* many times over where this was found necessary to complete their grasp of some of the rules of which they were conscious that they had not a perfect knowledge.

RAPID THINKING.

Those who attempt fast writing do not, as a rule, experience any very great difficulty in developing the requisite amount of dexterity with the pen. With practice, the majority of students can train themselves to write the shorthand characters as quickly as the fastest orator can utter the words they represent. The real difficulty, in most cases, is inability to *think* with sufficient rapidity—there is hesitancy in visualising promptly the stenographic equivalents of the spoken sounds. This mental hesitation (than which there is nothing more fatal to speed) can be overcome to a very great extent, if not entirely, by practice of the right kind, and by the

judicious reading of well written and printed shorthand. In order to become a fast writer, it is necessary that the Pitmanic characters should be so impressed upon the brain that they can be brought to the point of the pen immediately the sounds leave the lips of the speaker. This is a matter of the greatest importance, and I shall refer to it more fully later on.

"SHORT CUTS."

It has been pointed out over and over again that there is no "royal road" to high speed, but, occasionally, one still meets with phonographic students who entertain the impression that the ability to report a fast speaker can be acquired only by the employment of a multiplicity of contractions, phraseograms, intersected outlines, and other shorthand expedients of one's own invention. This is an entirely erroneous impression. It is possible to reach a very high rate of speed, one that is sufficient for all practical purposes, without in any way departing from the principles laid down in the text-books. If the student attempts to burden his memory with a large number of so-called "short cuts," he will put an unnecessary strain upon his mental powers and will, probably, retard, rather than assist, his progress. It is sometimes difficult to convince the young student—especially if he is rather fond of inventing abbreviating devices—that the most condensed outline is not always the best for practical purposes; but if he can be induced to study the notes of practical writers who have had some years of experience in various kinds of reporting work, he will discover that the outlines they employ are, for the most part, simple in character, and such as can be read with very little difficulty by anyone who has made a thorough study of Phonography. I do not, of course, mean to say that special abbreviations may not be usefully employed in highly technical reporting work.

PHRASEOGRAPHY.

In his initial attempts to become a fast writer, there are two extremes which the young student is advised strenuously to avoid. One is the tendency to write each word separately,

and the other is the inclination experienced by some writers to join together as many words as possible, irrespective of whether or not it is an easy matter to write such lengthy outlines with rapidity in actual reporting work, and quite heedless of the fact that many words so united have no grammatical or natural connection. Some phonographers, who are unusually fast longhand writers, possess so much muscular energy that they are able to report fairly rapid speakers without employing phraseography to a very great extent; but a practical writer who does not summon to his aid at least a fair number of phraseograms, written on the lines of the examples given in the text-books, is a rarity. Phraseography, as most students realise, is a particularly interesting part of the study of Phonography, and, if rightly applied, it is capable of proving of great service to anyone who aspires to become a verbatim writer.

THE NEED FOR ACCURACY.

There is one thing that I wish specially to impress upon the speed aspirant, and that is the importance of geometrical and theoretical accuracy. It is very desirable that the student should be able to write quickly; but speed is valueless unless it is accompanied by the ability to produce legible notes. It may not be possible to write at the rate of 180 or 200 words a minute with that degree of precision and correctness that may characterise notes written at half that speed; but it is possible—as has been demonstrated by high-speed writers on numerous occasions—to write Phonography at the rate of even 200 words a minute in such a manner that the notes can be read with ease. If, from the commencement of his practice, the student makes a determined effort to form the phonographic characters as perfectly as the circumstances allow, he will find that, as he increases his dexterity with the pen, there will be very little loss of legibility.

In the early days of his practice, there is often a tendency for the student to develop a careless style of writing, and to form the shorthand characters larger than is desirable. This is especially noticeable when a definite effort is made to put on speed. It is, however, a tendency that should be

resisted from the outset. The student should always endeavour to write correctly and clearly, so that at any time, even after the lapse of months or years, his notes can be read without hesitation. The student who keeps this point in mind throughout the whole course of his practice, and makes a determined resolve not to sacrifice legibility for speed, will never regret that resolution, for though, in the initial stages, it may involve the expenditure of more time and labour than his more lethargic confrères may be disposed to devote to it, in the long run he will find that he is able, not only to do better work, but to accomplish that work with greater ease and less mental strain.

READING PRACTICE.

As has been stated already, high speed is not brought about simply by the quickness of the hand, although, undoubtedly, manual dexterity is an important factor. One of the secrets of fast writing is to become familiar with the shorthand characters for a large and ever-increasing number of words, and the more the phonographic vocabulary is extended, the easier it will become to write rapidly and accurately. Everyone who wishes to qualify as a verbatim writer should read through a large proportion, if not the whole, of the notes he takes for practice, and should, in addition, read and study every shorthand periodical he can lay his hands on. Reading practice is a part of the shorthand writer's training that is frequently neglected, though the experience of those who have been "through the mill" shows that its importance cannot be over-estimated. The difficulty with most writers is not so much that they cannot form the shorthand characters quickly enough, but that they cannot call to mind with sufficient rapidity the outlines they wish to write. If the student knows what to write, he will usually find that practice will enable him to wield the pen with the necessary freedom. Without doubt, one of the very best, if not the best, means of registering the outlines on the brain is afforded by reading practice. Indeed, quite as much importance should be attached to reading printed and well-written Phonography as to writing from dictation.

WORKING UP SPEED.

It is necessary that the shorthand student who has made up his mind to turn his theoretical knowledge to practical account by becoming a fast writer should not train merely on easy political speeches or commercial correspondence: he should have a great variety of matter—classical, technical, scientific, and legal—dictated to him as well, so that he may become a thoroughly proficient shorthand writer, and be able, should the occasion arise, to undertake any class of reporting work. As he makes headway in speed, and finds himself able to write comfortably at the rate of about 100 or 120 words a minute, he should also avail himself of every possible opportunity of taking down lectures, speeches, and sermons, selecting, if possible, slow speakers at first. If this plan be adopted, the student will not only greatly improve his powers as a shorthand writer, but will gradually acquire a knowledge of a wide range of subjects with which, in the absence of the necessity for such practice, he would, in all probability, remain entirely unfamiliar.

This book is published with the object of supplying teachers of shorthand, as well as conductors of speed classes at Shorthand Writers' Associations, and other centres of phonographic activity, with a good selection of matter, of varying degrees of difficulty, for dictation purposes. Doubtless, it will also be widely used by students who have not an opportunity of attending speed classes, but who have to rely upon the services of a reader at home. The tests are marked out in quarter-minute sections for reading at rates from 80 to 200 words a minute. They will, therefore, afford practice of the right kind, not only for the student who is on the first rungs of the speed ladder, but for the fast writer as well, and if they are used systematically they will, undoubtedly, prove very helpful.

TRANSCRIPTION WORK.

Students in speed classes should be encouraged to read through their shorthand notes and to devote a considerable portion of their time to transcription work, so that they may get accustomed to their own peculiarities of writing and

gradually acquire the ability to turn their shorthand into readable longhand with facility and precision. Some students consider that they are doing all that is necessary if they read over most of what they write in shorthand, but there is a vast difference between reading the notes with the assistance of someone to put in a word here and there when the student hesitates over a badly-formed outline or an unfamiliar expression, and transcribing them into longhand without any such aid, for a single outline that cannot be read may be the key to an involved sentence. In the one case the student might have the impression that he had secured an almost perfect note, while in the other case the transcript might reveal a dozen or more errors.

It is advisable, too, when going through the notes, to circle with a pencil, and afterwards to write out in geometrical and correct Phonography several times, any outlines which may have been clumsily formed or any groups of words that might, with advantage, have been written without lifting the pen. This practice will help the student to write the better forms with facility and to impress them upon his memory.

GENERAL HINTS TO THE SPEED ASPIRANT.

1. Speed in writing is attained by systematic and regular practice, based on an adequate knowledge of the principles of Phonography; by an abundance of reading practice; by the judicious use of intersections, contractions, and phraseograms, formed on the lines of the examples given in the authorised text-books; by embracing every available opportunity of strengthening any weak points in theory or in connection with the formation of outlines; and by dogged determination and hard work.

2. Remember that the section in the text-book which is devoted to Grammalogues is one of the most important parts of the book. This is obvious when it is pointed out that, on an average, about six words out of every ten written by the shorthand scribe are represented by Grammalogues. These word-signs should, therefore, be committed to memory, so that they may be written without the least hesitation.

3. When practising with the object of increasing your

speed, it is a good plan, occasionally, to attempt something more than you can do. If, for instance, you can write fairly comfortably at the rate of 120 words a minute, you should get some practice at 130 and 140. Even if you do not succeed in taking down the whole of the matter at the higher rate, the mere effort to do so will prove helpful. Probably, your outlines in the 140 test will not be so well formed as those in the 120 test; but you will be able to improve them with further practice.

4. It is advisable, when writing from dictation or attempting some reporting work, not to allow the mind to dwell to any great extent upon the outlines that are being formed, but to endeavour to follow the speaker's train of thought and to make a mental note of the various arguments advanced.

5. A fountain pen is far preferable to a pencil, both for slow and fast writing. A hard, fine nib is usually found to be the best—particularly for rapid writing. A fountain pen lightens labour and very materially assists in the production of good work.

6. Use a note-book that opens flat on the desk or table. Pitman's "Fono" No. 5, for instance, is an excellent book for all shorthand work, and can be highly recommended.

7. If you wish to excel as a shorthand writer, you must know the meanings of the words you write. You should; therefore, be a systematic student of the English language. An excellent plan is to write in shorthand a leading article from a newspaper each day, to circle or underline with a pencil any unfamiliar words, and afterwards to look up their precise meanings in a dictionary. By adopting this two-fold plan and by following the advice previously given, the student will, in time, render himself capable of taking a rapid note and of presenting a good transcript.

CONTENTS

PREFACE	PAGE v
INTRODUCTION	vii

SECTION I

80 WORDS PER MINUTE

NO.		
1.	A PRESIDENT'S ADDRESS	1
2.	ELECTRIC DEBENTURE STOCK	2
3.	TRADE TRANSFERENCE	3
4.	A PRESIDENT'S ADDRESS	4
5.	ECONOMY IN EDUCATION	6
6.	MEETING OF A STEAM CAR COMPANY	7
7.	RESERVE POWER	8
8.	MEETING OF A MINING COMPANY	9
9.	DAMAGES FOR SLANDER CASE	10
10.	TREES AS A BARRIER TO CULTIVATION	12
11.	PORT OF MANCHESTER WAREHOUSES	13
12.	THE SMOKE NUISANCE AND ITS PREVENTION	14
13.	MEETING OF A UNIVERSAL PROVIDER COMPANY	15
14.	MEETING OF A MINING COMPANY	17
15.	A VISIT TO NEWARK	18

SECTION II

90 WORDS PER MINUTE

16.	THE LOCAL GOVERNMENT BOARD	20
17.	LORD BURNHAM	21
18.	FARMERS AND INCOME TAX	22
19.	THE CHANCELLOR OF THE EXCHEQUER ON THE FOSTER- ING OF TRADE	24
20.	REPORT ON THE TEACHING OF FRENCH	25
21.	THE SUMMER SCHOOL	26
22.	THE PERSONAL LIABILITIES OF A RECEIVER AND MANAGER	28
23.	STANDARD HOTEL CHARGES FOR MOTORISTS	29
24.	THE PLACE OF MAP TESTS IN EXAMINATIONS	30
25.	APPLICATION AT COURT FOR AN ORDER AGAINST A RAILWAY COMPANY	32

CONTENTS

SECTION III

100 WORDS PER MINUTE

NO.		PAGE
26.	MUSEUM OF FLOUR MILL INDUSTRY	34
27.	PRESIDENTIAL ADDRESS OF THE MILLERS' ASSOCIATION	35
28.	THE TEACHING OF GEOGRAPHY	37
29.	THE FACTORY WATCHMAN	38
30.	MEETING OF AN ELECTRIC LIGHTING COMPANY	39
31.	THE STORY OF BRIDGE-BUILDING	41
32.	A CLAIM FOR ELECTRICAL FITTINGS	42
33.	HOW TO PRODUCE A CHEAP BRITISH CAR	44
34.	THE SELECTION OF LUBRICANTS	45
35.	THE NEED FOR A SIMPLIFIED MOTOR-CYCLE FOR MIDDLE-AGED MEN AND WOMEN	47
36.	STORIES OF EARLY MEDIAEVAL TIMES	48
37.	REGIONAL SURVEYS IN RELATION TO GEOGRAPHY	50
38.	THE WRITING OF AN ESSAY	51
39.	ORGANISATION OF THE ENGINEERING INDUSTRY	53
40.	THE RED CROSS SOCIETY	54

SECTION IV

110 WORDS PER MINUTE

41.	MEETING OF AN OIL CORPORATION	57
42.	THE ELECTRIC LOCOMOTIVE	58
43.	THE FINANCE OF THE COCONUT	60
44.	A REVIEW OF A BOOK ON RURAL HOUSING	62
45.	ACQUIRING A VOCABULARY	63
46.	HOW PLANT VARIETIES ARE ORIGINATED	65
47.	MEETING OF AN INSURANCE COMPANY	66
48.	OBSERVATION IN EARLY EDUCATION	68
49.	CRITICISM OF A FINANCE BILL	70
50.	AGRICULTURE IN ITALY	71

SECTION V

120 WORDS PER MINUTE

51.	A RUBBER COMPANY	73
52.	MEETING OF A BANKING COMPANY	74
53.	LIMITED LIABILITY FOR SMALL TRADERS	76
54.	HOTEL COMPANY MEETING	78

CONTENTS

xvii

NO.		PAGE
55.	CORPORATION OF INSURANCE BROKERS AND AGENTS	79
56.	A CHEMICAL COMPANY	81
57.	MEETING OF AN ASSURANCE COMPANY	83
58.	LIGHT CAR TALK	84
59.	MEETING OF AN AMERICAN BANKING COMPANY	86
60.	DIRECT CURRENT MOTORS	88
61.	MEETING OF A RAILWAY COMPANY	89
62.	OUR TRADE IN GEMS AND PRECIOUS STONES	91
63.	ORAL COMPOSITION	93

SECTION VI

130 WORDS PER MINUTE

64.	SPRING IN MID-WINTER.	95
65.	ELECTRIC TRACTION	96
66.	IRRIGATION OF INDIA	98
67.	JUDGMENT ON A RAILWAY DISPUTE	100
68.	OVERHAULING LOCOMOTIVES AND MOTOR CARS	102
69.	AFTER HARVEST	104
70.	REINFORCED CONCRETE	105
71.	THE MIDLAND INDUSTRIES	107
72.	GERMANY'S WAR FINANCE	109
73.	MOTOR-AMBULANCES	111

SECTION VII

140 WORDS PER MINUTE

74.	ANNUAL MEETING OF A COMMERCIAL BANK	114
75.	SIDECARS	116
76.	CRITICISM OF A COMPANY'S ANNUAL REPORT	118
77.	THE COLOURS OF ANIMALS	120
78.	QUALITATIVE ANALYSIS AS A SCHOOL SUBJECT	122
79.	MAINTENANCE OF PERMANENT WAY	124
80.	REMOVING STAINS FROM STONEMWORK	126
81.	THE ECONOMICS OF MARINE FUEL	128
82.	TRIAL TRIP IN A SUBMARINE	130
83.	THE VOICE AS A MUSICAL INSTRUMENT	132
84.	THE SELECTION OF AN ARBITRATOR	134
85.	IRRIGATION IN INDIA	136
86.	A REAL BIOGRAPHY	137
87.	THE PRIZE COURT	139

SECTION VIII

150 WORDS PER MINUTE

NO.		PAGE
88.	SMOKELESS FUEL COMPANY MEETING	142
89.	INSURABLE INTEREST	144
90.	DIRECT CURRENT MOTORS	146
91.	AUDITOR'S ACTION FOR FEES	148
92.	TEA TRADE REVIEW	150
93.	JUDGMENT IN A RAILWAY APPEAL CASE	152
94.	THE FASCINATION OF SWITZERLAND	154
95.	THE USE OF LEAD PAINTS	156
96.	BUTTERFLY MIMICS	158
97.	THE COLONISATION OF AUSTRALIA	161

SECTION IX

160 WORDS PER MINUTE

98.	MEETING O. A SHIPPING COMPANY	164
99.	THE ECONOMICS OF OIL FUEL	166
100.	CARRIAGE OF OIL	168
101.	A PRIZE APPEAL	170
102.	LORD ROBERTS	173
103.	THE ELECTRIC LOCOMOTIVE	175
104.	CONTRACTS OF SERVICE BETWEEN EMPLOYERS AND EMPLOYÉS	177
105.	MUNICIPAL FINANCE	179
106.	JUDGMENT ON FLOUR CONTRACTS	182
107.	MAINTENANCE OF PERMANENT WAY	184

SECTION X

180 WORDS PER MINUTE

108.	PRESIDENTIAL ADDRESS	187
109.	SHIPPING CONGESTION	190
110.	THE ESTABLISHMENT OF AGENCIES	192
111.	POINTS FOR THE CONSIGNEE	195
112.	NEW PARLIAMENTARY SESSION	198
113.	ACCOUNTANCY IN SOCIAL SERVICE	200
114.	SELF-BALANCING LEDGERS	203
115.	THE PORT OF LONDON	206

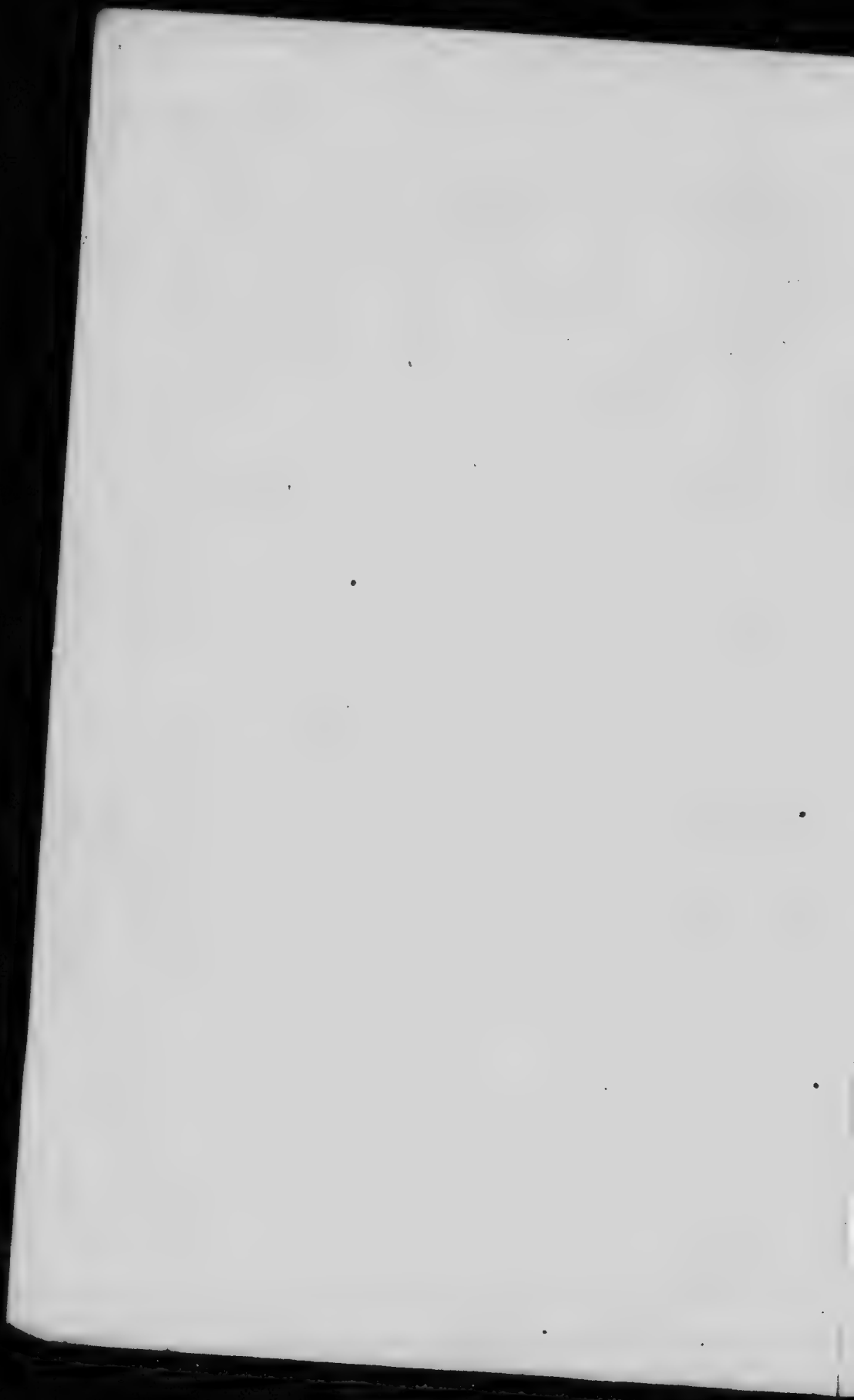
CONTENTS

xix

SECTION XI

200 WORDS PER MINUTE

no.		PAGE
116.	PRACTICAL POINTS IN BANKRUPTCY PRACTICE	204
117.	THE SHIPPING OF GOODS	217
118.	BANKS AND SMALL DEPOSITS	219
119.	THE CEREAL TRADE	221
120.	WAR TAXES AND STOCK VALUATIONS	220
121.	MONEY AND CREDIT	222
122.	CLASSIFICATION OF OCCUPATIONS	225
123.	NEGOTIABLE INSTRUMENTS	228



PITMAN'S FIVE MINUTE SPEED TESTS

SECTION I

80 WORDS PER MINUTE

1. A PRESIDENT'S ADDRESS

A YEAR ago it was my very pleasant duty to congratulate all the members of our Union on the great | progress made during the previous year, and to express the hope that succeeding years would be no less satisfactory from | all points of view. It is, therefore, not without a degree of pride that at this Conference I again have | the pleasure of calling attention to our continued growth, and to our increasing influence over the conditions of employment of || the clerical workers of this country. Our membership is larger by several thousands than a year ago, and, although considering | the large field we have on which to work progress may seem slow, closer acquaintance with the life and conditions | of the average clerk shows that this view is quite a superficial one, and that our growth during the past | three or four years is almost phenomenal. But satisfactory growth in numbers is not all we have to report. We || can point to gratifying successes 2 in our struggles on behalf of our members on the industrial field. Whether in the | law courts against unscrupulous employers, or in the more satisfactory way of agitation and negotiation, experience teaches us that only | by organised endeavour can any material advantage be obtained by the working class. We have obtained large increases in salaries | and material reductions in the number of hours worked by members in various parts of the country. As is quite || 3

Jan. 18 35 - 22 min.
Jan. 9/36 - 18 "
2 " 25/36 - 15 " FIVE MINUTE SPEED TESTS

natural, our appetite grows by what it feeds on, and, but for the fact that our inadequate finances necessarily have a crippling effect on our activities, we should be able to show a much better record than is at present possible. No movement is worth much which cannot command the whole-hearted sympathy, devotion, and self-sacrifice of its adherents, and what has been done by other sections of the working-class movement ought surely to be emulated, if not improved upon by the clerical profession.

It was but yesterday that the clerk was looked upon as hopeless in the Trade Union world, partly because of the fact that his work in the office, by its very nature, had contributed to his divorcement from the craftsman in the workshop. Only since the rise of big industrial concerns and the consequent massing of large numbers of clerks to carry on the clerical side of such businesses can the profession be said to have become less remunerative to those who have entered it.—*The Clerk.*

2. ELECTRIC DEBENTURE STOCK

SIR,—All investors who are concerned in the adequate protection of the rights of debenture holders will be glad to note that at the meeting yesterday of the debenture stockholders of the South Metropolitan Electric Light and Power Company the proposals put forward by the directors were defeated. A three-fourths majority of those present was necessary to carry the proposals, but out of the meeting of 17 only 11 voted in favour and 6 against. Further, I understand that had it been necessary to take a poll, the vote against the proposals would have been much more formidable. It is not necessary to go into the matter in detail, but approximately the directors' suggestion was to vary the provision for depreciation, which is at present fixed at 2½ per cent. by the trust deed until 1923, so as to reduce this percentage to 1½ per cent. on the nominal amount of paid-up share and loan capital.

It appears that the trustees for the debenture stockholders were not even consulted regarding what they have since described in the circular as an impairment of the security of the debenture holders by an amount which during the next eight years would reach not less than £40,000. Quite apart from the principle this is a very important matter indeed. The proportion of the debenture stock issued by the company was increased by permission of the debenture stockholders, and by this means the company was enabled to avoid issuing a second debenture stock, but as the proportion of 100 per cent. debenture stock to the share capital is an unusually high one, it was particularly important that the interests of the holders of the senior security should be fully protected, as is done by the trust deed. At the same time, Mr. Beeton hinted that there might be a basis for negotiation between the debenture stockholders and the directors as representing the shareholders, but the rights of the senior security cannot be diminished without some *quid pro quo*, such as a higher rate of interest, a premium on redemption, or some definite sinking fund arrangement. If it is desirable in the interests of the shareholders that there should be some modification of the depreciation provision in the debenture trust deed, then some compensation in other respects must be provided.—I am, yours faithfully, A. BROKER. —The Financial Times.

3. TRADE TRANSFERENCE

MR. HEATH said he felt it an honour to be invited to confront the actual Charity Organisation Society. He first described his experiment in trade transference. He found in the early days of the war that the really skilled people were as unwilling to apply to the National Relief Fund as to any previous funds. In dealing with the unskilled, investigation, restrictions, and regulations were, as always, necessary, but he felt that some different plan was needed for the skilled. He was fortunate enough to strike a real handicraft — leather.

stitching—and one in great demand. Again, the furniture trade, which was depressed, was sure to revive when peace came, and to reabsorb the men. The manufacturers' evidence was highly conflicting. Three of them positively assured him his plan was the most cock-and-bull one they had ever heard of. This illustrates the difficulty of taking evidence about industrial changes. The head of the Bethnal Green Leather-Work School was entirely favourable. The Cabinet Committee gave a good grant—£600—and complete liberty of action. 2

The men, he admitted, were skilful and the foremen keen, and he was soon executing such good orders that he had a difficulty in not making profits! Only 10 per cent. of his men failed, and he placed over 200 in the leather industry. They were now making, many of them, £3 to £4 per week. He gave them four weeks' training each, and paid each a maintenance grant of £1 and spent £1 2s. 6d. per week above that on training them. His men averaged forty to forty-five years of age, but he had a number over sixty. 3

The experiment provided an answer to certain questions of human psychology. These men shrank from going anywhere as beginners, but did not mind coming to this class, where they were cordially received. The trade union sent all the men. He made no investigation, relying upon the test of the month's grind. Besides men in the furniture trade, he took on compositors, insurance agents, clerks, and french polishers. The last two groups provided all the failures. The polishers were rough, and the clerks could not use their hands. Bringing together eye and hand seemed to be the essential. 4

With regard to the future, he thought those present would agree that nobody really knew the precise causes of unemployment. —*The Charity Organisation Review.* 5

4. A PRESIDENT'S ADDRESS

THE matter of adequate payment for overtime also demands early and serious consideration. The custom of giving a

2
third-rate | meal or its equivalent in return 'or several hours' work must receive its quietus. It is amazing that it has | continued to be thought quite the right thing on the part of many employers to keep their office staffs working | late at night without payment. It is all of a piece with the general treatment of our profession. A calling || which is unable, 1 through lack of cohesion, to resist tyranny in one respect must expect indignities heaped upon it in | other ways also. All hang together. When clerks, as a class, combine in their own interests to resist encroachments upon | their common liberties, the degrading conditions surrounding their employment will vanish like mists before the sunrise.

Another matter at present | engaging our attention is the subject of healthy offices. The havoc wrought by pulmonary diseases among those engaged in clerical || labour is sufficient 2 justification for great activity in this direction. The subject is of such vital importance to clerks as | a class that your Executive Council is co-operating with the Railway Clerks' Association in the endeavour to get a Bill | passed by Parliament which has for its object the sweeping away of all unhealthy offices. We might do more than | we have done to create a sympathetic public opinion on this subject, so 3 that when the time comes we shall || be able to ensure the measure passing into law. Experience teaches that only those who compel attention to their wrongs | can ever hope to secure redress, and there is no reason to believe that our case is any exception to | the general rule.

The points I have touched upon, whilst sufficient to engage our attention for some time to come, | are only a few of the items arising out of clerical occupation. The policy of giving secret references is a || difficult matter to tackle, and it is 4 therefore not surprising that we have not much to show in this respect. | We have, however, brought several offending firms to book and hope soon to create so strong a prejudice against this | nefarious practice as to compel the Government to legislate on the subject.

Another phase of our work requiring consideration is | the

development and encouragement of organised propaganda by District Councils. I am of opinion that the time has arrived when || proposals might very well be formulated for the financial assistance of these bodies.—*The Clerk.* 5

5. ECONOMY IN EDUCATION

THE council of the Teachers' Guild desires to direct public attention to the serious injury to educational work in London | that is involved in the reduction of staff, both in secondary and in elementary schools, that is now being carried | out by the Education Committee of the London County Council. We recognise that education, like all other departments of public | life, must expect to suffer at this crisis in our national history, and we believe that teachers are willing to || make | any personal sacrifice that may be necessary in the interest of national economy, but we think it important that | any sacrifice of educational efficiency should be made with a full realisation of its gravity, and with a clear understanding | that it shall only be a temporary measure. Recent educational advance has been achieved largely through the reduction in the | size of classes, and the resulting possibility of more specialised teaching and closer personal attention. The changes now being made || will not only involve larger classes, 2 but fail to take account of the special circumstances of different schools, and will | tend to reduce the work of the most efficient schools to the level of the less efficient.

As a temporary | measure, it may be our duty to acquiesce in this policy, at a time when many of our male teachers | have volunteered for military service. But we foresee the danger that, in the demand for economy that will rightly be || 3 made after the war in all departments of public expenditure, the present policy may be retained, or even extended. We | believe that our most pressing need after the war will be for greater educational efficiency, and that the sacrifice of | educational progress is the one sacrifice that, as a nation,

we must not allow. The welcome that has been given | by a section of the Press to the action of the London County Council, and the fact that other educational || authorities are already adopting the same policy, lead us to feel that bodies like our own ought not to allow | it to be supposed, by their silence, that they are not alive to the injurious effect, particularly in the teaching | of science and modern languages, of the reduction of staff that is now being made, and to the importance of | restoring, at the earliest possible moment, a standard of staffing at least as large as that which is now being || abandoned.—*The School World*.

6. MEETING OF A STEAM CAR COMPANY

THE annual general meeting of this company was held yesterday at the Great Eastern Hotel, E.C., Mr. Thomas Clarkson | (chairman and managing director) presiding.

The Chairman, in moving the adoption of the report and accounts and the declaration of | a dividend at the rate of 6 per cent. per annum, less income tax, said it was very gratifying to | the directors to be in a position to place before the shareholders so strong a balance-sheet, particularly having regard to || the exceptional circumstances which had been brought about owing to the war. The profit for the year, after making provision | for all expenses, including maintenance and annual overhauling of omnibuses, depreciation of plant, tools, and buildings, was £33,000. | Of that sum £16,000 had been placed to special reserve for the renewal of omnibuses, leaving a net | available profit of £17,000. The sum of £3,000 was carried to general reserve, while the carry-forward || had been increased to £4,000. With the amount placed to reserve their reserves now reached the substantial figure | of £60,000, and the financial position was stronger than it had ever been before. [The profits for the | year might have justified the directors in recommending a larger dividend, but the present difficulties of finance and the developments | which were being made in the company's business had to be

taken into consideration. At their last meeting suggestions were || put forward that they should focus their attention more on the running side of the business than in connection with | the extension and building up of the manufacturing side of the works, and negotiations had since taken place with a | view to meeting as far as possible the desires then expressed.

It was found impossible at that time to carry | out any plan which would show a benefit to the company. The directors had come to the conclusion that on || the cessation of hostilities the demand for heavy motor vehicles would be exceedingly large, and the demand upon the immediate | resources of the company would keep the works very fully engaged. After carefully reviewing all things in connection with the | company's affairs, he thought he might say that all was well with their business, and he hoped, with the continued | efforts which had so persistently been shown by the staff in the past, that next year might be a successful || one.—*Daily Telegraph*.

7. RESERVE POWER

A REMARK commonly on the lips of students of a certain type is that they need nothing more than a | moderate knowledge of the subject they are studying or a moderate degree of skill in the practice of the art | which they happen to be trying to acquire. They are satisfied with just enough ability to serve the immediate purposes | of the moment. Later on the same people are heard complaining that their merits are not recognised, that promotion does || not come | their way, and that their salaries do not increase. The result is that for which they have prepared | themselves. The man who gets on in life is the man whose knowledge and skill are greater than are required | at the time, the man who has fitted himself for tasks that have not yet been entrusted to him. He | is the man who is ready when an emergency arises to cope with it successfully. He can step outside his || daily routine and show himself equal to the | unaccustomed duty. When opportunity comes along he is

able to respond to | the call where the man who has contented himself with "just enough" to get through his everyday work discovers that | the very thing that opportunity demands is beyond his capacity. Illustrations could be given without number. Perhaps as good and | as forcible an example can be drawn from the use of shorthand in the business office as from any other || source. In the course of the suggestive discussion the other day at the Incorporated Phonographic Society on the question whether | what is nowadays termed "high speed" is "worth while," the testimony of rapid writers of proved capacity as to the | value of a reserve of skill was emphatic. The shorthand clerk whose employer dictates slowly is unexpectedly asked to take | notes of an interview in which one of the parties is a rapid speaker. Or his employer takes a partner || who is accustomed to dictate rapidly. Or the clerk is invited to take down a document which is read out | to him quickly while a caller who has brought it is waiting impatiently to have it returned to him. The | greater the speed capacity of the writer the more satisfaction he will be able to give to everybody concerned, including | himself. If he be incapable of anything more than a moderate speed, his deficiency will be made painfully apparent ; and || it will not be forgotten.—*Pitman's Journal*.

8. MEETING OF A MINING COMPANY

THE shaft has gone down between 3,500 and 3,600 ft. Representation is being made | to the Union Government in order to secure some consideration for those who have risked such large amounts of money | to prove the existence of the reef in the Far Eastern Rand. Those representations have met with a favourable reception, | but the question arises naturally, "Yes, it is all very well ; you have incurred great expenditure, and we quite appreciate || what you have done, but what we want to know is, having spent so much are you able to continue | the expenditure to install the plant necessary for dealing with such an enormous area ?" That is the point

that the | directors of the Gold Mining Company had to consider, and, representing, as we do to-day, a large interest in the | Gold Mining Company, I want you to bear that in mind when you are weighing the importance of any arrangements || which have been made for continuing the work on this property. Those arrangements have been made by three or four | of the most powerful mining groups in South Africa. Well, that ensures two or three things. It ensures, first of | all, that the capital, when required, will be forthcoming for carrying on your work to its ultimate issue on the | largest possible scale should developments warrant it. It ensures another thing. It entirely sets aside any question that might be || raised by the Government in South Africa as regards the capacity of those undertaking the work to carry it through | to a successful completion. Then, so far as our share interest is concerned, it carries with it this further point. | It is perfectly true that by the scheme our shareholding will be cut down to one-third—that is to say, | putting it broadly, instead of having, as we have to-day, 100,000 shares in the gold mining company, that || number will be cut down to, say, 33,000 or 34,000. Yes, but those 33,000 | or 34,000 shares will probably represent not such an area as we should have had under the old | conditions of something like 1,436 claims, which, after all, is a vast area as | a mining proposition, but, if one's expectation is realised, it is probable that we shall be able to secure from || the Government a grant to the Gold Mining Company of a much larger claim area.—*The Financial Times.*

9. DAMAGES FOR SLANDER CASE

WHEN the case was called and the jury about to be sworn in, Mr. Holmes, K.C., said he was | pleased to be able to state that his Lordship might be able to dispense with the swearing in of the | jury. He wished to make a statement which would explain the position, and any evidence that would be given could | be furnished to the Bench. The jury were accordingly relieved from service.

Proceeding, Mr. Holmes said the action was one of considerable importance to the parties concerned, and in many respects it was of material public interest. He felt from the beginning that there had been what he might describe as a mistake, and that there had been no real hostility towards his client, who came into Court not for the purpose of obtaining damages, but simply and solely to vindicate his character. The plaintiff stood high before the public for many years as a boot manufacturer and general leather worker. He carried on a successful business and enjoyed the goodwill and esteem of not only his own trade, but of all with whom he came into contact. He supplied a great many wholesale houses in Ireland, and had at one time a contract for supplying as many as 1,000 pairs of boots to the postal authorities, and he was for many years contractor to the Dublin Corporation for supplying a special class of boots to the waterworks' staff. There was what was called a standard boot which was lodged with the Corporation engineer's department. During recent years the corporation had an expert whose duty it was to compare with the standard the boots supplied by the contractor. By some misfortune, unknown until some time after the commencement of the action, some nine pairs of boots supplied by plaintiff were rejected as defective and not up to the standard, the allegation being that runners were used in their manufacture. The latter was entirely disproved by the plaintiff, who furnished evidence, on examination of the cast boots, that they were well and truly made. It afterwards transpired that the real standard had been stolen from the Corporation department by a dishonest employee. When he learned of what had taken place, he realised that however badly plaintiff had been used by the comparison which had been made between his boots and those provided for the expert to make the comparison, he said he had been hardly dealt with, but he could not agree there was malice in the conduct of the expert.—*The Leather Trades' Review.*

10. TREES AS A BARRIER TO CULTIVATION

THE President of the Board of Agriculture gave useful advice both to farmers and landlords at Shrewsbury the other day.

The younger generation of agriculturists may benefit by it if they will carefully study the suggestions made, and before acting too hastily upon any new methods consult an experienced and successful neighbour as to the wisdom of carrying out any change, though it may appear feasible, yet might lead to disappointment and loss.

Great care should be taken before breaking up pastures that carry a fair head of stock. Land that grows young cattle well and keeps about one to the acre, would carry still more if limed and slagged, and would probably pay the farmer far better than by ploughing it up, thus increasing the labour bill, and adding to the number of horses, which, to most farmers, are not the most profitable stock on the land.

Further, anyone who has had the experience of bringing strong land, that had been long worked on the four-course system, to graze well, and carry, say, a bullock to the acre, would not for a moment entertain the suggestion of ploughing it for the sake of getting a crop of wheat of five quarters to the acre, and the prospect of having to wait for ten or twelve years before getting the land back to so fertile a state again, notwithstanding the liberal use of cake and feeding stuffs, with that end in view.

Then comes the advice to landlords, which, if acted upon freely and generally, would bring about a great improvement in a better understanding between landlord and tenant on many estates.

Every observant person travelling over England or Wales must have noticed the enormous waste of land, both under cultivation and grass, caused by the number of trees that encumber the fields. But let me at the onset say that no one loves trees more where properly managed and grown for profit, shelter, and amenities of a district. What is sad to look upon is the number of trees left to grow, mature, die,

and rot, on cultivated ground, where a plough cannot approach within many yards of them, and when the land is mown the machine has to be diverted from its course, and that causes delay. |

A few trees on pastures are useful for stock to lie under on hot summer days, but when one sees || a dozen dotted over a ten-acre field one feels that there is a heavy tax upon the occupier.—*The Farmer and Stockbreeder.* 5

11. PORT OF MANCHESTER WAREHOUSES

I WILL deal with the sugar traffic. The Ship Canal Company discharged two cargoes of refined sugar and warehoused them | in their quay sheds, where the sugar remained for about six months. This was all the sugar they could take | at the port, and the fact that it was warehoused in the quay sheds not only prevented other sugar from | coming to Manchester, but the fouling of the quay berth during that six months prevented a dozen or more steamers || and their cargoes from obtaining transit shed facilities there. The consequent loss to the Canal Company in tolls may have | been, and no doubt was, considerable, but that is as nothing to the indirect loss to others by ships being | unable to get rid of their cargoes, and so be free for repeated voyages. In such circumstances the fact that | each day's demurrage upon a large steamer costs £100 is the least consideration. This congestion at the ports, || most of which was avoidable, has been one of the main factors in the abnormal raising of the oversea rates | of freight, and it will, I am sure, be a source of considerable satisfaction to you, as it is to | your board, that this little company has done more to relieve congestion at the ports—principally of London and Liverpool—| than has the action of any Government Department or Committee. 2

When our opportunity came we offered the Sugar Commission storage || for a cargo, and they gave us a steamer which had already been lying for a considerable time in the | Thames awaiting a discharging berth; she came round here, 3

and we dealt satisfactorily with her cargo, and she probably made | another voyage than she otherwise would have done. Later we took a cargo which had been lying in Liverpooli waiting | a berth, and as a result of providing the facility cargoes of refined sugar are now being regularly consigned direct || 4 to Manchester, which has thus become an important distributing centre for refined sugar, so that it is now only necessary | for the Ship Canal Company and ourselves to serve the traffic well for it permanently to remain with us.

An | important point I wish to make clear is that not one of these cargoes would have come to our port | unless we had guaranteed warehousing accommodation for the whole of the cargo; yet not one-half of the import has || used our 5 warehouses, because the remainder was sold and delivered during discharge.—*The Times*.

12. THE SMOKE NUISANCE AND ITS PREVENTION

Mr. E. D. SIMON (chairman of the Manchester Smoke Abatement League) spoke of the work done by various scientific societies | in Manchester, which resulted in the creation, in 1913, of the Air Pollution Advisory Board. Roughly, the possible lines | of research might be divided into three—damage done by smoke, and the means of reducing factory smoke and domestic | smoke. It was estimated, he believed reasonably, that the damage done in Manchester and Salford by smoke amounted to nearly || £1,000,000 a year. Further reliable 1 data, however, was still required as ammunition to destroy public apathy. As regarded | factory smoke, Mr. Simon said the problems were bound up with the question of the designs of mechanical stokers and | the supply of air at the correct point to ensure smokeless combustion. There were countless patents, but the problems could | only be solved by or in conjunction with the manufacturers. Fortunately, on the whole, efficiency and smokelessness went together, so || that 2 research paid, and on that account, and partly on account

of pressure applied by public authorities, an advance was being made in the reduction of factory smoke.

Domestic smoke undoubtedly provided at present the main field for such work. The variation in efficiency between existing types of coal-burning grates was enormous, and on that point there was much room for further research. There was the possibility, which had long been held out before us, of the production, at a commercial price, of semi-coked coal which would burn as cheerfully as coal and as smokelessly as coke. Improvements were needed in the adaptation of open fires for the burning of coke, and, most important of all, in gas fires. Although valuable work was being done in that direction in Leeds, London, and Birmingham, much remained to be done to give the public a gas fire which would give out radiant and convected heat in the best proportions, would allow no leakage of gas into the air, and would give the right amount of draught up the chimney.

Broadly, the most hopeful line of progress was in the direction of endeavouring to secure that bituminous coal should not be burned as such, but after conversion into products which could be burned smokelessly. They could not hope to abolish the open coal fire, but it ought to be possible to confine it to the sitting-room, all cooking and bedroom heating being done by gas and electricity.—
The Chamber of Commerce Journal.

13. MEETING OF A UNIVERSAL PROVIDER COMPANY

WHEN a portion of our premises was ready and open for business, a startling change took place in the business conditions and outlook throughout Argentina, culminating in crop failures, enormous shrinkage of railway traffic, continued fall in the rate of exchange, financial stringency of an unexampled character and the establishment of a moratorium. Our business thus received a serious blow. People

of position and wealth were enforced to put in practice economies of expenditure to which they were strangers, and, || naturally, shops doing a high-class trade were the first to suffer. I cannot do better than read you extracts from | the letters of our general manager.

In the first place, as regards the status of the house locally I can | assure you that from the first it won for itself the position it should occupy among others in the same | line here, or, in other words, it forced itself into prominence among those of the very first rank in Buenos || Ayres. 2 Harrods is recognised locally as a class by itself, rivalling any of the older establishments. It is also now | commencing to be known in the interior, and I am confident that in a short time it will be known | in every corner of the Republic. The terrible crisis through which the country is passing, naturally accentuated by the European | situation, has, I think, reached its worst stage. During the last twelve months the situation has been extremely acute, but || in my opinion the reaction 3 should come within six months. Although it will come gradually, we shall certainly experience its | good effects. My prediction of an improvement within six months is based on the very favourable crop prospects. You are | well aware that the welfare of this country depends almost entirely on its cattle and agriculture, and after the successive | bad crops we have had, if the new harvest realises expectations, then we should not be long in experiencing a || change for the good. 4

Our departments are spacious and all of interest for the public. Nevertheless, we shall have to | consider (not now, but at a more opportune time in the future) the advisability of adding new departments to our | stores. At present by far the greater part of our clients are ladies, as the gentlemen's department we have at | present is not sufficiently complete, and it is really necessary to complete it as soon as possible, so that the || men, as well as the ladies and children, may find 5 in our house everything they require for dress.--*The Financial Times.*

14. MEETING OF A MINING COMPANY

WITH regard to our programme for the coming year, the managing director of the Russian company estimates to produce about 1,000 tons of copper, with the usual high gold and silver values, but the difficulties which we are experiencing in the supply of fuel and materials have led us on this side to reduce this to the still more conservative estimate of 600 tons output. The former average of precious metal values will be materially increased if we include ore from the Tuba Mountain. Efforts will be made to keep the cyanide plant in continuous operation, but here, again, allowance must be made for difficulties in supplies. At our last meeting I stated that, with the cyanide plant in operation, we should be earning profits at the rate of say £100,000 per annum. This estimate still holds good, and, despite intermittent working of the cyanide plant, we are justified in looking on Mr. Gilman Brown's estimate of 1,000,000 roubles profit during next year as a conservative statement, and this does not include any profit from the 5,000 tons of phenomenally rich ore from Tuba Mountain which will be treated next year.

It is necessary for me to say a few words regarding the financial position. At the present moment, owing to the conditions of which I told you, the working of the plants is only intermittent. But the receipts are sufficient to pay all our current expenses, including preparation of new stocks of materials, and to leave a surplus. When we embarked on our new construction programme we had every reason to anticipate that the necessary funds would be provided from the issue of reserve shares and from the full and continuous operation of our plants, but the war made this impossible. In order, therefore, to finance the completion of the cyanide plant, the purchase and erection of the blast furnace plant, and the capital locked up through the war in our gold slimes, arrangements were made in Russia for a credit of 700,000 roubles, of which a part has been brought into our balance sheet as loan from the Discount Bank.

Petrograd, this loan being guaranteed by us. Other than ordinary current supplies accounts, this is our only indebtedness. I | would mention that, against this credit of 700,000 roubles, we have an amount of some 400,000 || roubles held up in the gold slimes.—*The Financial Times.* 5

15. A VISIT TO NEWARK

BY THE
Toronto [e

THE Mayor, in response, thanked the President for his references to Newark, where he saw they maintained appreciation for the | noble town, with its glorious history and traditions. He was very glad to have met the members, because it was | always a good thing to get new ideas. He had heard with interest what had been said of Chester with | regard to what they did to individuals who despoiled ancient property which they had purchased, over which, he took it, || the local authority had no control. He hoped what he had heard would bear fruit if ever in Newark they | had a chance of interfering with any projected vandalism which might occur in their midst. They did treasure the premises | which the president had referred to, and were glad that even so much remained intact. He was pleased to meet | them because their profession had a great bearing upon the public life of the country, and especially upon public health. || 2 The amenities of our towns were largely in their hands. They had to do with new buildings, town planning, and | the opening out of old courts, and replacing of old worn-out buildings; also those matters of sanitation which had | so much influence on public life. Speaking of the parish church, he said it had been his pride and privilege | to have succeeded in raising nearly £2,000 for the repair and restoration of the tower. The mayor also || referred to the restoration of the Tudor Hall, which they had visited, and reminded them that the work had been | carried out by one of their members, Mr. Lockton. As a Newarker he was proud to think they had recovered | this splendid structure from what was most unpromising material when it fell into the hands of 3

the corporation. He hoped | the new school designed by
Mr. Lockton would for many years remain a memorial to
that gentleman's ability. With regard || to what the 4
president had said concerning the advertisement for a new
borough surveyor and engineer, he could only hope | it would
not prevent members of their association applying. There
was no doubt Newark was a stepping-off place for able |
young men, and he instanced the case of the present borough
surveyor, who was leaving a post at £250 | to take one which
would rise to £750. He hoped all their members would not
only improve their || minds, and acquire knowledge, but be 5
ambitious and keep before them high ideals of the public
service.—*The Journal of the Institution of Municipal Engineers.*

SECTION II

90 WORDS PER MINUTE

16. THE LOCAL GOVERNMENT BOARD

"THE Local Government Board, Road Board, and Administrative Bodies" was proposed by the Chairman. The Local Government Board, as they were all aware, was formed for the purpose of governing schemes and expenditure of local authorities, and, as public officials, they looked to the Local Government Board rules as their chief guide in the carrying out of their various duties. His own opinion was that by giving the ratepayers an opportunity of attending public inquiries to lodge their objections to any particular scheme, the engineer responsible for the work could carry out the scheme with greater confidence after the approval of the board had been given, and in this way the Local Government Board was of the greatest assistance to engineers in carrying out large and important schemes. Also the granting of a portion of the salaries of certain officials to local authorities very often enabled councils to offer better salaries to properly trained officials. There was one thing which had not yet been done, and which, in his opinion, rested with the Local Government Board—that was, to support a Bill in Parliament to grant to all public officials superannuation and security of tenure. This matter, he felt sure, would very soon occupy the attention of the Local Government Board, and he sincerely hoped that their request in this respect would have the full approval of the board and that they, as local government officials, would enjoy the same benefits as civil servants and Poor-law officers. With regard to the Road Board, he felt sure that all road engineers who had taken advantage of the purse of that authority must admit that

they had been able to do much more surfacing work than they could have hoped to do without its assistance. | He had heard it said that the Road Board existed only for the benefit of county councils, and that rural district councils derived | no benefit whatever from the board. In the meantime this might, to some extent, be true, because it is natural that the | Government were desirous that all main trunk roads carrying heavy through traffic should be strengthened and put into good repair first, after || which no doubt consideration would 4 be given to other roads where the traffic was not so excessive. There was no doubt in his | mind that the board since its formation had made rapid strides in the right direction, and that its future policy would meet with | general approval. As to the administrative bodies, it was to these that they, as officials, had to look for their bread and | butter. A council of any kind could not, in his opinion, be too careful in the appointment of its various officials, and || full consideration 5 should be given to the amount of salary to be paid to these officials.—*Journal of the Institution of Municipal Engineers.*

17. LORD BURNHAM

ENGLISH life is robbed of a remarkable and vigorous personality. For something like sixty years Lord Burnham filled, and filled always with honour | and distinction, a leading position in the world of journalism. His influence, it may safely be said, was always an influence for good. | It is a mere commonplace to say that during the sixty years from 1855 to 1915 | the world and the conditions of human life changed more and in more vital particulars than in any similar period in history. || Every such change immediately affected and had to be reflected in the Press. That during all that momentous period he succeeded in holding | the remarkable position which he had won, adapting himself—and the great newspaper which he controlled—to each alteration in his environment, keeping | pace always with his day, growing with the growth of science and of human thought and

enterprise, is in itself an overwhelming | testimony to his genius.

His immense vitality and continually self-renewing freshness was, indeed, perhaps Lord Burnham's chief characteristic. He himself, speaking in || reply to the congratulatory address which the Press of the world united in presenting to him on his 80th birthday, said that he | had learned the secret of "burying each day when the day is over, so that you may be able to commence again with | absolute freshness on the following morning." And this vitality and perennial freshness of view inspired all those who worked with or came | in contact with him. He was always buoyant and sanguine. And he was great-hearted and full of benevolence.

It was his || buoyant and sanguine spirit which won the great success for the *Daily Telegraph*. Matthew Arnold said that the *Daily Telegraph* represented "the | rowdy Philistine" in British life. What Matthew Arnold meant was that it represented all the robustness and vivid patriotism of the middle classes. And | it was true. Lord Burnham was possessed of a great faith in the destiny of England, and he believed that the people, | in whom he believed, shared that faith with him.

It has been said that Lord Burnham used his influence always for good. || He used it, in public ways, always for the good of England as he saw it. In less public ways, and in ways | altogether private, he used it always for benevolence and to help others less able to battle with the world than himself. Of his | multitudinous personal beneficence it is impossible to speak. Of the innumerable good causes which have been helped by the *Daily Telegraph* funds—| "shilling funds" and many other subscriptions—the world knows. In addition, Lord Burnham was a munificent patron of very many charitable movements. ||

18. FARMERS AND INCOME TAX

FARMERS have no desire whatever to escape bearing a fair share of payment for the cost of the war, but they have

thought | it unjust that they should be taxed on hypothetical profits three times larger than what they have hitherto been taxed on, a method | which has not been adopted in the case of any other class of taxpayer. It seems unjust, that after a general laxity | on the part of the Inland Revenue with regard to accounts, that they should be called upon to produce accounts for the || previous three years, should they feel themselves aggrieved. As far as dairy farmers are concerned, I am sure no undue profits are being | made at present.

The relief under Schedule D will, I fear, be as illusory as the relief offered to landowners who complained | that their actual expenses in repairs exceeded the statutory allowance. There were not many estates where the books had been kept in | such a manner as to admit of the average cost of the previous five years being furnished, except with great labour and expense, || so few claims were made. So much for the relief under Schedule D. Some farmers under the old regime may, no doubt, have | escaped paying a fair share of income tax, but there is no reason why, if a man requires his hair cut, you should | shave his head! The following appear to be some of the injustices which may arise under whole rent assessment, or Schedule D, | as ordered at present :

(1) A man who took his farm at a low rent in the old days of extreme agricultural || depression, and by an unwritten and honourable understanding has never had his rent raised, will pay less income tax, though he is making | more profit, than the man who took his farm in more recent and better times.

(2) Many farmers rent extra land one year | and give it up another. How are such profits to be averaged, or are they to be excluded?

(3) Some men may | have only farmed the same land for two years, a period insufficient to admit of their furnishing accounts for the previous three || years. Must they pay on the whole rent for the last year?

We all know that, unless your capital is very large, you |

will not make much profit on the first or second year's trading, and as the assessment as lately established cannot now be altered, | that which we should aim at is allowance of larger deductions in estimating profits than are at present sanctioned.

There is an | old saying, "Circumstances alter cases," and deductions that may have seemed unreasonable under the old regime may now wear a different complexion. ||— 5
Farmer and Stockbroker.

19. THE CHANCELLOR OF THE EXCHEQUER ON THE FOSTERING OF TRADE

I THEREFORE put down as one of the first necessities of this country, if she is to hold her own during times of | war and when war is over, that we must improve our research methods, the education of our people, and the training of our | young men. we should not attempt to economise on the money we now spend on technical colleges and modern appliances.

There are | other directions in which we can cut down expenditure with less national damage. The next quality which undoubtedly is required, in order || that we can hold | our own is that we should be adaptable. The war at all events has taught the commercial people of | this country the necessity of adaptability. The whole commercial world has changed. Men have had to go into almost entirely new businesses. | They have had to consider almost entirely new conditions, and that adaptability, which was not supposed to be our characteristic in the past | has been fostered rather than hindered by the war.

I agree that the extension of commercial banking as distinct from the more || conservative form of banking, which is our custom in this country, may very well be fostered here. There is nothing that is more | likely to aid English industry and commerce and place it on a level where it can compete with that which is organised in | Germany than assisting young firms to get on to their feet. I have sometimes regretted that the great joint stock banks, by | gradually absorbing all our 2

country institutions, have to some extent removed that close touch between the individual banker and the individual trader || which was of the very essence of our industrial prosperity. There are no institutions in the world that are better managed than our | joint stock banks, but the mere fact of their being centralised in London, and having only managers instead of partners in the provincial | centres, has actually placed our traders and manufacturers and commercial men at a disadvantage compared with those who in Germany are in | touch all over Germany with more enterprising or, shall I say, more adventurous institutions. 3

Our banks must be a little more adventurous. || If they cannot, let us have additional institutions. We must overhaul once more our patent system and our copyright laws. 4

It has been | necessary to review a great many questions in Government departments, but I can assure the House we have not restricted ourselves purely to | official inquiries. The questions raised by the exchange meetings held for the benefit of manufacturers are being considered by the Commercial Intelligence | Committee, which is composed almost entirely of practical business men. Let the House be assured that we are now looking well ahead. ||—*The Daily Telegraph*. 5

20 REPORT ON THE TEACHING OF FRENCH

IN some schools oral answering is ridiculously low and obscure in all subjects. The defence occasionally put forward by teachers—that they are | always telling the pupils to speak out, but cannot get them to do so—is simply admitting that the general standard they | set is not sufficiently high. There are, of course, many schools where this piece of bad manners, for it comes to that, does | not exist, and where the teachers realise to the full that such apparent trifles may exercise considerable influence on the future comfort || and success in life of their pupils. I have also noticed that this obscurity of speech sometimes goes hand in hand with an | excessive concentration on early or even premature success in 1

written examinations. From every point of view, and not only for the sake of French pronunciation, the evil deserves to be pilloried. I wish that we could devise some positive means of penalising schools which sin in this respect.

Again, the necessity of good oral work, not only for conversational purposes, but as an integral part of grammar drill, has not yet been fully realised. The appeal to the eye, according to the practice of too many teachers, is still more important than the appeal to the ear. The teaching of language, in other words, is a constant suppression of the vocal and auditory organs which were the primary and remain the most important instruments in the communication of thought in ordinary human intercourse. The fallacy is an old one, and has vitiated much of our philology and of our whole study of language. To return to the school, however, a written exercise can scarcely be said to be completed until it is known orally, whereas, in fact, as soon as the exercise is "gone over," it is too often regarded as done with. Try the pupils on the sentences orally, and the result is disastrous; they have been written down laboriously with the aid of grammar, vocabulary, and dictionary, the mind has held the words for a second on their way from their source to their destination and last resting-place, but not long enough to make them a possession for all time, or even for ten minutes. The old-fashioned practice of getting a fair copy of the Latin "prose," of learning it by heart for the next day, and of facing an examination on fair copies every month methodically, deserves to be revived.

Lastly, the sounds are frequently not taught methodically but in a haphazard fashion. The pupil makes a blunder, the teacher repeats the correct form; that is all. In many cases the pupil does not even take the trouble to try to imitate the teacher. The result is nil.—*School World*.

21. THE SUMMER SCHOOL

"BREAKING-UP day" has always been a popular institution. Students look forward to it almost from the beginning of the

term. The striving to be the "top dog" of the form or class may be there, and with that kind of competition or emulation co-operators are not likely to quarrel. But behind it—and the distance varies, of course, according to the type of student—there is the more or less latent desire to be freed from the school stocks. The Co-operative Summer School, which was opened a month ago at Arnside, came to a close on Saturday, and none regretted the fact more than the students themselves. When they entered the school they morally bound themselves to attend the various lectures and classes arranged by the Central Educational Committee, and it is to their credit that they faithfully carried out their obligations in this respect. Visitors to Arnside know that, given suitable weather, it is an ideal place for a quiet holiday, and that amidst such surroundings it is by no means an easy matter to stay indoors and study the causes and effects of the Industrial Revolution, the laws of supply and demand, or the future development of the co-operative movement. But the students at the Co-operative Summer School did it; they were, as a matter of fact, just as regular and prompt in attending the lectures and classes as they were the mid-day meal. Nor had Principal Hall, who was mainly responsible for the educational efficiency of the school, a "big stick" in his desk; he simply told the students what was expected from them, and, as he himself willingly admits, he has never had reason to be disappointed with the response.

It is, of course, difficult to estimate, or to put down in figures, the value of the Co-operative Summer School to the movement. One feels that it has done good, and that its possibilities in the way of co-operative character formation are practically unlimited, but it would probably be far from an easy matter to convince the merely commercial co-operator that it has an important place in the movement. Incidentally, that is the type of co-operator the Central Educational Committee are anxious to see at their Summer School, and they are endeavouring to attract him by the

promise | that, in due season, he shall be given ample opportunity for recreation in accordance with his usual holiday custom. Once they do persuade | him to attend the school, they fully believe, whilst redeeming their promise in regard to recreation, to make him, through conversion to | true co-operation, a source of strength instead of weakness to the movement. It is estimated that over 200 different students have || attended the school since it was opened.—*The Co-operative News*. 5

22. THE PERSONAL LIABILITIES OF A RECEIVER AND MANAGER

WHEN a person is appointed merely as receiver his position as a rule is tolerably clear. His duty is to take possession of | the property over which he is appointed in place of the owner thereof, and to collect the income and pay any necessary and | usual outgoings, such as small repairs, so as to make the property as productive as if the owner himself were in possession. | The position is different, however, where the appointment is that of manager as well as receiver. A manager, as the term implies, || has power to deal with the property over which he is appointed, within certain limits. He is necessarily allowed a certain amount of | discretion, but there are many matters in regard to which he must obtain the authority of the Court before taking definite action. In | law a receiver and manager is merely a custodian of the property over which he is appointed. His relation to the person | who has given up possession is not in any sense equivalent to that of an incoming to an outgoing tenant; hence he || cannot claim to be supplied with gas or electric light without paying off any arrears that may be due. If he refuses to | pay, the supply may be cut off. Arrears of rates must also be paid except under very exceptional circumstances. 2

A receiver and manager | is the servant of the Court, and in all questions of importance the Court insists upon maintaining control. This does not mean | that he is merely a machine

to carry out the Court's directions. On the contrary, he is expected to use his knowledge || and discretion, and to come to the Court only when he has a definite and concrete matter upon which guidance is required. He | is personally liable to persons dealing with him in respect of all liabilities incurred in carrying on the business, but he has the | right to be indemnified out of the assets for the expenses he has properly incurred. For this purpose he is not an | agent but a principal, and therefore assumed to pledge his personal credit. It is open to him always to contract himself out || of personal liability by a specific reservation to that effect, but the liability will not be avoided merely by signing as receiver and | manager.

Where a receiver and manager is appointed to carry on a business one of the chief difficulties in the early stages is | usually the want of cash, and there is a great inducement to him to borrow—in fact it is sometimes absolutely necessary to | do so. The natural course is to ask some of those interested in the estate to advance the amount required, giving them || a first charge on the assets by way of security.

—*The Incorporated Accountants' Journal*.

23. STANDARD HOTEL CHARGES FOR MOTORISTS

THE more the moderate motorist tours about his native country, the more it is brought home to him that the one thing he | cannot gauge on leaving home is what so many days' hotel charges will run him into. It would seem not impossible for some | motoring Thomas Cook to arise, and, commencing by small degrees, and gradually extending operations till the whole of the United Kingdom was | well covered, to arrange a system of hotel coupons, available at any hotel under the agreement. These coupons should in the first || place be suitable for motorists, viz., they should comprise bedroom and attendance (a) for one, (b) for two, dinner, and breakfast.

As | one who has toured (not by road) fairly extensively on the Continent, I must say that Messrs. Cook's system of hotel

coupons | abroad is very hard to beat, and I do not see that the same thing should not be possible at home for motorists. |

As matters go at present, it is absurd not to know whether one is going to be charged 3s. 6d. or 10s. || for exactly the same class bedroom at the same class hotel or inn in different towns. If one is accompanied by one's wife | one may not care to haggle over the price on entering the place, and drive round the town inquiring at every hotel | what its charges will be, as some folk seem to think one should.

The handbooks of the existing motor organisations are of practically | no value in this respect, and one may strike a good, bad, cheap, or expensive hotel just as easily under their guidance || as if one were travelling with no badge at all. Probably the only useful road book for the United Kingdom at the | present moment is that issued by Messrs. Michelin.

I would suggest the matter be approached as follows : First take the well-known main routes | out of London. Circularise certain hotels along each route. A point now arises whether the system should be open or protected ; that | is to say, whether a league should be formed or not. Probably it would be best to start an association of motorists for || the purpose, charging a nominal subscription of, say, 5s. Only members of the association would then be entitled to the advantages of the | coupons, and hotel keepers would only grant such advantages to members on production of their membership card. On the other hand, it might | be that hotel keepers would prefer the system to be open to all motorists. It would be a bigger advertisement for themselves, and, | after all, they are the people who would have the ultimate say in the matter.

The chief point of ail would, of || course, be the scale of charges.—*The Autocar*.

24. THE PLACE OF MAP TESTS IN EXAMINATIONS

I THANK Dr. Unstead for the suggestion that a map should make a good test. I have longed for that for years, and | so

have a good many other teachers. Many of us have not the opportunity of meeting examiners with whom we could exchange views. | If we could only have an examination for schools, in which a girl may have two or three maps of some district, | and write anything she could learn from them, it would be a fairer test. It is no test to give a child || an | outline-map, with the rivers marked, and caterpillars for mountains, and ask the child to name them. To name a river is | no test of geographical knowledge. I would rather have a mere outline-map and have the child asked to mark in some river, and | something in connection with that river. It is no good asking the child to mark here a river, and there a river, | and so on. If it be a map of Africa, I would rather the child be asked to mark in a river, || and then the towns of | Khartum, Cairo, and Alexandria. If the child marks Alexandria correctly, it means not only that the child knows | about the Delta of the Nile, but also about the Mediterranean. If the child marked Cairo correctly, he would no doubt think of | it being on one side of the river. I have always gone through the map questions in examinations, and I have found | many isolated points. I have seen children asked to mark Galloway, in Scotland. Many people here could not do that. Of what || good is it? If the child during the examination could have an atlas, the paper could be set differently. There might be one | part of the paper in reference to the atlas, and the atlas could be used for that part. In teaching, I find that | children like to be given a piece of the World which I have not touched upon at all, and asked to write | about that part. I have tried to do it for forty minutes, and I have had a demand to continue, and we || have continued. It is interesting to see a child stand up and ask, "How did so-and-so find it out?" I cannot | understand why Mr. Barton said that the best scholar would do the best map, because I have found that the most stupid child | can generally get some marks in connection with the map on the lines of some of the examinations; she can make something | of it; but she does not know geography. The

whole relation of examinations as a method of testing the work we do || in our schools is, however, part of a very 5
difficult subject.—*The Geographical Teacher.*

25. APPLICATION AT COURT FOR AN ORDER AGAINST A RAILWAY COMPANY

APPLICANTS, who are carting agents in Hull, asked for an order enjoining the railway company to desist from an undue preference of itself, | and to afford reasonable facilities for the acceptance of applicants' traffic. It appeared that prior to 1904 fruit traffic imported | at Hull and destined for North-Eastern stations had been despatched by rail from Kingston Street goods station. This station becoming congested, the | fruit traffic was transferred in 1904 to two sidings in the immediate neighbourhood. When the riverside quay was opened || in 1908 the fruit traffic was transferred there. For some time back carting agents had been employed to cart fruit | traffic to the stations, for which the railway company allowed them a rebate of 1s. a ton. When the riverside quay was opened | the railway wagons were brought down to the quay, and the practice then was for the carting agents to take the fruit | from No. 35 warehouse by rully down to the wagons at the quay side, the rebate being reduced to 9d. because of || the shorter distance. In February 2
last the carters' men struck without notice, because they were not granted the 1s. rebate for their quay-side | work, whereupon the railway company adopted the practice of bringing the wagons direct into the warehouse and loading the fruit direct into them | by its own men. On the carters resuming work in March the railway company refused to allow them to cart the fruit | from warehouse to wagon as before, since cartage was unnecessary, and it also refused to accept fruit traffic carted from the warehouse || to the 3
Kingston Street station. Applicants complained that in doing this the railway company was unduly preferring itself to

other carters, and claimed | that it was bound, as a reasonable facility, to accept this carted traffic when tendered.

The chief point made by witnesses for the | applicants was, that the method of handling trade by "rullyng" it from the warehouse to wagons on the quay resulted in quicker | despatch than the present method of loading it direct into wagons in the warehouse.

Mr. Justice Lush, in giving judgment, said he || was satisfied 4 that the company were not withholding a reasonable facility in refusing to let the applicants cart from one portion of the | railway premises to another. The applicants were trying to force their services on the company, who did not require them. Even if this | carting were a reasonable facility, the proper persons to ask for it would not be the applicants, but the purchasers of the | fruit. Nor did the company's refusal of applicants' services cause delay in the receipt of the goods by the consignees. The application || must accordingly be 5 dismissed.—*The Freighters' Journal*.

SECTION III

100 WORDS PER MINUTE

26. MUSEUM OF FLOUR MILL MACHINERY

SIR,—Referring to the resolution of the Incorporated National Association of British and Irish Millers, passed unanimously at its annual meeting on 10th June, I venture to ask the hospitality of your columns to make an appeal to the milling trade, and to explain its scope.

The Science Museum at South Kensington contains representative exhibits of obsolete mechanical objects in various departments of industry and invention. Stephenson's famous locomotive "Rocket" may be instanced. Also may be seen examples of the "Hobby Horse," which are the germs of the present huge developments of the cycle industries. It is possible as well to notice in the long range of models the great changes in the progress of ship building, and there are many other phases of mechanical progress too numerous to mention. In all this there is (except for one small model) no evidence of the fundamental change in the flour milling industry during the last fifty years. Alone of the mechanical arts—and, perhaps, the most ancient next to agriculture—it has seen no change in substantial principle, and not very many in detail since earliest times. Therefore, the transition from stone to roller milling is not so much a development as a revolution. 2

I do not propose to enter now into its history, the genesis of which in this country may be traced, so far as I know, to the year 1862. Thirty years ago perhaps many of these early machines may have still existed, but the change since then has progressed in so rapid and far-reaching a manner, that I fear most of the machinery in previous use has been

scrapped. | Still, I have a lingering hope that some of the earlier machines may yet exist, together, of course, with machines of a later type, though || already obsolete. 3

It is in this hope that I venture to appeal to the milling trade for information as to the existence of such machines. | I shall be grateful to any of your readers who will kindly send me such information, either as to machinery in their own possession, or | known to them as existing in their own locality.

I purpose to try to compile a list or register of such machines that I may | hear of as being available, and to beg that they may be preserved for awhile. At a later period I hope to go into this || list, with the counsel of such milling 4 experts as may be kind enough to advise me, for a selection of representative machines to illustrate milling | progress during the last fifty years. The owners of such obsolete machines would then be asked to loan, or to give, same to the national | collection at South Kensington as the nucleus of an exhibition, that would probably grow and be of value to students of milling technology.

May I | ask also the favour of any suggestions, or advice, in regard to this subject, either in your columns or direct to me, and I shall || be pleased, also, in either way, to answer 5 any inquiries. Yours truly,—*The Miller.*

27. PRESIDENTIAL ADDRESS OF THE MILLERS' ASSOCIATION

2 I UNDERSTAND that at this period of the proceedings it is usual for the incoming President to address you on his policy for the coming | year. This is, of course, a very difficult matter as things are now, as this country has been engaged for over 10 months in what | is probably the most terrible war that has taken place in the whole course of its history. We, as traders, are running our businesses under | great difficulties, which difficulties are much increased owing to the shortage of staff in our offices, and labour in our mills. In consequence of the || war we have been, and still are, |

constantly confronted with fresh and grave problems connected with our trade, and I think that the only right and proper policy for this Association in such circumstances is, whilst things continue in this abnormal state, to take up only such matters as are really urgent and pressing. Several such matters are on the agenda for this meeting, and will be before us this afternoon, but there is one matter which is not on the agenda, and to which I should like to refer. You will remember that at our meeting in April last, a letter was read from Mr. Hawker tendering his resignation as the secretary of the Association. Seeing that Mr. Hawker has been our secretary for seven years, and has done so much good work for the Association, it was with the greatest regret that we received his resignation. He, however, kindly stated that he would continue to act during the war if we so wished, and if we were unable to find a substitute. A committee was appointed to deal with the matter which again has been brought up by Mr. Hawker informing me that he has been accepted for the Naval Air Service and must go to Portsmouth for a month's training at the end of this week. He, however, states that Mr. Wade, who acts as his assistant secretary, and who has considerable knowledge of the matters connected with this Association, is at our service if we like to make use of him. I have no doubt that for the time being we shall be glad to avail ourselves of Mr. Wade's services. Personally, I think the present is not the time to make any change if it can be avoided, but as the committee will have to have in view the finding of someone eventually to take Mr. Hawker's place, it would be of assistance to them if they knew the wishes of the members as to the possible enlargement of the scope of this Association.

We have several matters on our agenda which I fear will occupy some considerable time in discussion, and I will not take up your time further except to say that I cannot but feel that there never was a time, and probably never will be a time, when this Association has a greater opportunity of proving of real value to the trade.—*The Miller.*

28. THE TEACHING OF GEOGRAPHY

GENTLEMEN, having now so far given you a rough idea of the history of geography and geographical teaching, I now proceed to inquire what the objects of teaching geography are. We shall then be in a position to see how far these objects are realised and how far it is possible, by improved methods of teaching, to approach their realisation. In teaching geography, a teacher should have in view two objects—a *practical* and an *educative* object. There is scarcely a subject which is of more use to a people in their every-day life than geography. The greater a people are, and the greater their commercial interests, the more indispensable does a knowledge of geography become to them. But another object is, or should be, realised in teaching geography and that is the training of the intellect in all its faculties, not the strengthening of the memorising faculty alone, but the development of the reason, of observation and of imagination. The fact is that the teaching of geography, as generally carried on in our schools, serves neither of these purposes, except to a very slight degree. Long lists of mountains, rivers, capes, towns, exports, and imports, etc., answer little practical purpose but that of passing examinations. Little use is made in after-life of this carrying knowledge. And no educative purpose other than that of strengthening the memorising faculty is answered by committing to memory lists of meaningless, because unrelated, facts, yet if rightly taught, both the practical and the educative objects may be readily realised. The geography lesson, generally disliked by teacher and pupils, may be made the most interesting of the subjects in the school curriculum. No other lesson affords more opportunity for the application of general principles, for the exercise of the imagination, and no subject yields such fruitful results if only the pupil is taught to observe and to read into and interpret the map.

Many of the faults committed in teaching geography would soon disappear if the teacher would dispense almost entirely with the text-book, or at least not adhere to it so

slavishly | as many do. Many geographical text books are bad in themselves, and too often does the teacher limit the information given to that contained in the | book. The geographical text-book, of course, has its uses. It supplies many facts which no map can give, it systematises the pupil's knowledge; it is || a means for familiarising the pupil 4 with new and difficult names; above all it is adapted for the revision of facts gained from the map. | But the teacher should remember that the text-book like the atlas should be used almost exclusively for review and task-work at home, just as | the teacher's instruction and the wall-map should be used for class-work. The usual practice with many teachers is to spend the whole geographical period in | bearing as a memoriter exercise, the portion of the text-book prescribed for the previous day's home task. The best teaching is that which dispenses || with the text-book and relies upon 5 the map.

29. THE FACTORY WATCHMAN

IN any fair-sized factory it is customary for a watchman to be employed to guard the works from the time the men leave off | work in the evening until they resume the following morning. The watchman touches his hat to the manager as the latter departs, and some of | the men, perhaps, have a chat with him before they leave the works, but, on the whole, the watchman is an individual in whose duties | little interest is taken until something unpleasant happens in the shape of a fire or a burglary. Then, of course, comes the inevitable examination into || the habits of the watchman | during the night, and the precautions taken to guard the premises. The guardian of the premises is probably an old | man, not gifted with the best of sight and hearing, or he may be a workman who is incapacitated in some way which prevents him | from following his usual occupation, for there is a widespread idea that physical fitness is not essential for this job, while any special qualifications for | such a monotonous and usually uneventful occupation is hardly ever

discussed. In times of peace there are always a certain number of fires and other || untoward incidents in factories during the time the watchman is on duty, but those which have occurred since last August have, in many cases, been | put down to the hand of the enemy, an accusation which, after all, is only an attempt to explain the outbreak, and we are no | nearer the solution of the real difficulty of preventing further loss or damage. Theoretically, if we could employ a perfect watchman, the factory would never | suffer damage after business hours. Ingenious devices have been invented to give evidence to the employer that the watchman has duly perambulated the factory at || certain stated intervals. This, of course, prevents the watchman from making himself too snug in the office, but it does not compel him to take | an intelligent interest in valuable goods which are lying around. We think the watchman should be engaged with as much care as any ordinary workman. | One gets some idea of the contempt felt for the occupation when we come across a maimed philosopher sitting in a wooden hut before a | coke fire, engaged in the tremendous duty of guarding a hole in the road. The watchman, in our opinion, should be young and vigorous, with || some general knowledge of the trade concerned. Many proprietors of houses of amusement employ a fireman to guard the premises, a practice which has been | in force many years. This custom is certainly worthy of imitation more widely than it is at the present time, since, if the watchman be | a trained fire-fighter he will more likely be able to cope with a sudden outbreak and prevent it from spreading. Coach-body lofts and | saw mills should be swept up nightly. If this is too big a task for the watchman himself, someone should be specially employed for that || purpose. —*The Automobile and Carriage Builders' Journal.*

30. MEETING OF AN ELECTRIC LIGHTING COMPANY

THE balance sheet shows no alteration in our capital account during the past year. That has been the case now for many

years. I pointed out last year that we had provided over £700,000—£766,000 to be exact—out of revenue for capital purposes, and this year the amount is raised to £800,000. If we had provided that by the issue of further capital, taking it at, say, 5 per cent., it would have involved an extra charge of £40,000 for interest; this you are deriving the benefit of. It has had the effect of providing all our capital expenditure for the last ten years or so out of revenue, a very welcome thing in these present somewhat difficult times. The capital expenditure for the past year was rather heavier than for the previous two years, due to final payments for the most up-to-date turbine plant recently installed by us in our power house at Bankside. Practically the whole of the output of the station is now derived from steam turbines, and, of course, the result has been improved economy in generating expenses. The expenditure on mains is not heavy, as we have only about a square mile to serve, and the original mains were put down on a scale that allowed for a considerable increase of business.

Turning to revenue, for the first time since 1910 the net revenue for the year shows a shrinkage. At the end of June we had an increase of £2,000 in revenue, whereas we finished the year with £8,000 to the bad.

I told you last year that we had come to an arrangement with the City Corporation with regard to public lighting, and had commenced to install it. Had it not been for the war you would ere now, I think, have had a great deal of gratification in seeing those parts of the City which we had undertaken to light the best lighted portions of any great capital in Europe. I may remind you that on 18th August last the City of London Corporation had the right to purchase our undertaking by agreement. I am pleased to say they have not exercised it, and so the undertaking is secured to us for the rest of our term. I also told you last year that a proposal was on foot for the unification of the London electric supply by means of a Bill promoted by a group of banks, with which the County of London Company was associated,

and in which any other of the London companies had the option of joining. I explained the violent hostility to the Bill. The promoters, therefore, withdrew the Bill. The London County Council, as I had prophesied, brought forward a Bill based almost entirely upon the Bill that was withdrawn. The Bill was a somewhat ambitious one, and covered a very large area. || —*The Electrician*.

5

31. THE STORY OF BRIDGE-BUILDING

It is disappointing to the English lover of bridges to realise that so few in this country, and those almost all of the age of metal, are sufficiently important to figure in such a book. A score of English bridges dwell in the memory with an abiding charm ; but reflection shows that the makers of this book are right, and that there are sound physical reasons why we have no old English bridges of the first rank. If we had grander bridges we should have a less green and kindly land. On the whole, our northern rivers have an equable and gentle flow ; in summer and winter alike they glide with few sharp changes of level under firm turf banks. Our moist but not tempestuous climate at once keeps their channels brimmed and their vales and meadows verdant. Streams of this kind can be easily forded and ferried, so that bridges came as a late convenience ; this is shown by the preponderance on most rivers of names ending in "ford" over those in "bridge." Very different are the torrential rivers of the South of France and Italy and Spain. In wet weather their foaming and boulder-strewn channels cannot be crossed in a boat, on foot, on horse, or even swum ; and yet these fierce fluctuating streams are not confined to poor or thinly peopled neighbourhoods, like the hill districts where streams of similar kind are found in our own country, but flow by rich and famous towns. Bridges in Southern Europe were a prime necessity of civilisation. The Romans built them on their own grand scale, and the tradition has never been quite lost. The sharp alternations of climate also made it difficult for

2

many towns to obtain a good water supply ; hence came the Pont du Gard and || other great Roman aqueducts, cognate 3 with bridges in purpose and closely similar in architecture. Further to the east a similar fitfulness in the rainfall led | to the growth of the splendid Persian bridges described and depicted in this book.

The earliest bridge was a fallen tree, spanning a stream, or | a rock wedged between the sides of a narrow gorge. Such bridges are used freely by wild animals ; and Mr. Sparrow draws a credible picture | of the construction of the first artificial bridges on these models by " a tribe of ape-like men," under the guidance of a leader of imitative || genius. But 4 the earliest bridge-building of which we have definite evidence is far more recent, and was combined with domestic architecture in the same | line of descent as old London Bridge, the Bridge of Sighs at Venice, or Pulteney Bridge at Bath. The lake-village near Glastonbury, apparently had | two bridges connecting it with the shore, like the drawbridge of a mediaeval castle, but the important part of the work was a broad platform | supported above the water by piles. The object of the builders was rather to get away from the shore than to reach it ; instead of || building a bridge to 5 reach an island, they built an island and cut it off by a bridge. —*The Times*.

32. A CLAIM FOR ELECTRICAL FITTINGS

MR. WOODCOCK (for plaintiffs) said the claim was divided into two parts, the first two items of £50 each coming under a general contract | for fitting up the theatre, a contract which provided for payments upon architects' certificates, and as to those he (counsel) contended that it was not | competent for defendants to go outside their contract. The other item was for an electric motor and gear for raising the curtain, which was outside | the original contract work. Specifications and an estimate were submitted by plaintiffs, and approved by Mr. Gilbert Booth, defendants' architect, who wrote an

acceptance, plaintiffs' || undertaking being to do all the work | of electric lighting and plant required for the theatre. The work proceeded and payments were made from time | to time on certificates ; but notwithstanding the certificates, defendants now sought to go behind them and defended the claim on the ground that the work | was not carried out according to contract, and that it was negligently and improperly performed. On particulars being applied for, they said that the motor-generators | were not fixed so as to avoid vibration, the result of which was damage to the building and noise causing annoyance to the audience. The || generators were, 2 however, fixed under the supervision of defendants' architect, who showed the places where they were to be fixed, and he would not allow | the generators to be bolted into proper cement beds. If there were vibration it could easily have been remedied, and throughout the whole of the | correspondence he could find no complaint in regard to them. It was not until particulars were filed in the action that any complaint was made | about vibration. Defendants further complained that the motor-generator sparked badly, but plaintiffs said that if there were sparking it resulted from proper attention not being || given to the machine. When 3 fitted they were not sparking unduly, and were showing no signs of defect. Plaintiffs supplied Newton generators, which were the | best on the market. The architect was satisfied, and there was no suggestion by him that they were not what they should be. Defendants said | that the lighting was defective, but that was denied by plaintiffs, who stated that any small defects were remedied at once. The work was duly | passed by the local authorities, by the police, and by their own architect. There was, moreover, no condition in the contract as to silent working || of the motor. It was quite 4 impossible, where a curtain motor was placed inside the theatre, to avoid some noise, and consequently the common thing | was to have the motor placed outside. In that case the architect had to say where it should be placed, and he chose a place | under the stage.

Mr. Wm. Barber said that the motor was a good one, but it was placed in the worst possible place—under the stage, which acted as a sounding box. He would have placed it outside the auditorium. Even placed as it was, the difficulty as to noise might have been obviated by placing the motor in a case lined with felt.—*The Electrician*. 5

33. HOW TO PRODUCE A CHEAP BRITISH CAR

SINCE I first suggested that the best means of saving the British motor industry lay in the production by one maker of one part or unit of the car, another maker another part, and so on, we have gone a long way in discussing the matter, and my view has been misinterpreted as involving co-operation in the assembly of cars.

I find myself at issue with a certain British automobile manufacturer, curiously enough, and particularly on this point of practicability. I have no confidence in any scheme involving the co-operation of the whole trade, or the bulk of it. First, because I do not believe for a moment they will combine; and, second, because a single combination will defeat the main object in view; that is to say, to produce an inherently cheap car, extremely good value to the public, for a low-priced article. Competition will cease as between British makers as a matter of course, and, as in the past, the combination will become nothing but a price-maintaining scheme; that is to say, a means of killing competition at home and of encouraging competition from abroad.

My original suggestion still has the merit of practicability as a business proposition, though I regret to say that the utter deafness of the motor trade to the lessons shouted to them from over the herring pond puts their case in an almost hopeless position for the future. 2

It will be accepted that the limited number of makers of pressed frames and of pressed steel wheels supply the whole trade, for the simple reason that the product is made in quantity with expensive machinery, and that no ordinary

5 car maker can make his pressed frames and wheels more cheaply than he can buy them. The trade as a whole, and motor capital || as a whole, is seriously to blame because it has failed to grasp this fact, and to apply it to the manufacture of other parts | of cars. 3

As soon as a manufacturer can turn out a part as good as any other, but cheaper, the world of assemblers will make | a track to his door, and he can do this if he will only apply intelligence and capital to the task. He can safely leave | assembling to take care of itself, and if half a dozen car makers would individually devote themselves to this task without the necessity of co-operation, || and perhaps as a side line in the first instance, the whole national problem would be on a fair way to solution. Naturally the intelligent | maker would use pressed work for many parts which he never dreams to-day of making without complicated castings, costly machining, and hand work. 4

For many | years the whole trade has followed out its ideas of price maintenance, the glorification and the enrichment of the agent being a necessary consequence of | the sale of articles that are not greatly superior to or cheaper than others on the market. Advertising in its most complicated and expensive form || is necessary to maintain the sale of such material.—*The Autocar*. 5

34. THE SELECTION OF LUBRICANTS

A BRIEF description of a desirable lubricant is that its viscosity should be the least possible which will allow it to stay in place and | do the work. Summarising the commonly desirable characteristics, they are : (1) The oil should possess cohesion ; (2) it should possess the maximum possible adhesion ; (3) | it should be as far as possible unchangeable ; (4) it should be commercially free from acid ; (5) it should be pure—that is, it should | be what it purports to be.

The first to be discussed is the viscosity test, which is used to measure the internal friction of the || oil, or, as an engineer |

might put it, the shearing modulus. This test is of value because a lubricant is really used to keep a shaft or journal and its bearing apart. The journal really revolves on a sheet of lubricant, an action which has been described as revolving on the molecules of the lubricant. The ease with which the molecules slide over one another, therefore, determines, to a certain extent, the friction loss in a bearing.

A fine example of the effect of the viscosity of lubricating oil is furnished by an experience in a certain spinning mill. This spinning mill was operated with power derived from an engine carrying about the maximum load of which it was capable. The lubricant used on the spindles was changed to one which was supposed to be better. It was then found that the engine did not have power enough to drive the machinery in the mill; as a matter of fact, it was unable to start the machinery in motion. Examination showed that the only essential difference between the two lubricants was the possession of higher viscosity by the new oil. 2

The measurement of viscosity of lubricating oils is in a certain sense unsatisfactory, because the results obtained with the different instruments which are available for making this test do not agree among themselves. It is therefore customary to state the instrument which was used in determining any quoted viscosity. 3

One of the most commonly used viscosimeters is the Saybolt instrument. This is of the pipette type, having a tall pipette of rather small diameter immersed in a jacket which may be used for maintaining any desired temperature during the test. The test is made by filling the pipette to a certain point and noting the time of efflux, in seconds, which is taken as the measure of the viscosity of the oil tested. Or the so-called specific viscosity may be determined by dividing the time required for the efflux of the oil by the time required for the efflux of the corresponding volume of water. The Saybolt instrument was developed by the Standard Oil Company, and was used as a standard for many years, and is to-day. 4

The instrument most commonly used by the Germans, and now coming into rapid use in America both by the Government and by individuals, is known as the Engler viscosimeter. This differs from the Saybolt principally in using a shorter pipette of larger diameter.—*The Machinery Market.* 5

35. THE NEED FOR A SIMPLIFIED MOTOR-CYCLE FOR MIDDLE-AGED MEN AND WOMEN

YOUR very able leader "What of the Future?" must have interested a very large number of your readers, and I think, with very few exceptions, all would agree with your views. You announce a prize of £15 and £5 for the best skirtless dresses to be worn by lady motor-cyclists, and in this surely you are absolutely wrong, as, if the motor-cycling industry is to regain its normal prosperity, the sooner the manufacturers realise that they must build a machine that will be universally suitable for all riders, instead of expecting the riders to be brought into line with the existing machines, the better. 1

The well-known motorist who is good enough to offer the prizes for the best skirtless dresses confirms my view when he states that he cannot understand why more women do not go in for what is really a healthy pastime, and adds that, having been thrown several times with a long coat, he almost thinks the present types of women's dress add to the small dangers that there are. But for the word "dress" I would substitute machines, as I do not think you can point out a really suitable and safe motor-cycle for ladies' use, or for the use of a middle-aged man like myself, at present on the market. It is essential to popularise motor-cycling for ladies, and you will not succeed by means of impossible dresses; it can only be effected by a machine so designed that a lady in any dress can handle it in comfort and safety. For instance, a lady riding a suitable motor-cycle to golf, say, would attract instant attention from her fellow members, and an opportunity of trying the machine there and then could be given, which is not possible when special dress is required. Again, 2 3

how many married men would become owners if their wives could also use the machine?

It is for the manufacturers to provide a machine to suit the new markets; it should possess the following points:—

(1) Appearance. Must be light and graceful, and not filled up as if it were one solid mass from front to rear, as so many of the existing machines are.

(2) A really "open frame" of unquestionable strength and lateral rigidity, sufficiently low for ladies and middle-aged men to get on and off in their ordinary cycling costume, and perfectly safe even if an overcoat is worn in bad weather. 4

(3) Control to be simplified, say, as in the case of the Auto-Wheel, to a minimum number of levers.

(4) The machine should be fitted with a clutch and gear-box, and all the latest improvements on existing machines.

I do not think it necessary to elaborate on these points, but I would emphasise the fact that a frame which can be positively described as an open frame is imperatively the prominent feature of the present motor-cycling demand. I shall be very pleased to hear what your readers have to say. 5
—*Motor Cycling.*

36. STORIES OF EARLY MEDIAEVAL TIMES

ANOTHER reason why we must be on our guard in reading stories of early mediaeval times—"the Dark Ages," as they are sometimes called—is that the only people who then had leisure and quiet enough to write history were the monks. And the monks, being cut off from an active life themselves, hearing only the rumour of the clash and tumult of battle, would, perhaps, for that very reason delight all the more in tales of extraordinary deeds of arms and impossible feats of heroism. Again, their monastic habits, their practice of implicit obedience to others, would render them uncritical and ready to believe anything they were told, especially as they could not contradict it from their personal knowledge. And, lastly, because their imagination was nourished on the

wonderful stories of saints who performed miracles, and were always ready to intervene to help men out of their difficulties, or | to give them extraordinary power, they would be likely to account for any event which seemed otherwise inexplicable by attributing it to divine agency. You | will find this very well brought out in the famous story of Caedmon. People could not understand how an ignorant "lay" brother, who did not || even know how to write, should suddenly be able 2 to compose a poem, so they invented the legend of the appearance of Christ to him. |

Yet this story is taken from one of the most reliable sources that exist for this period of our history. It is from *The Ecclesiastical | History of the English People*, written by Bede. Now, Bede himself tells us that he was born in 673, and that when | he was only seven years old he entered the monastery of Wearmouth, whence he was afterwards transferred to Jarrow, where he spent the rest of || his life. So, as the 3 monastery of Whitby was not founded till 657, he must have lived almost at the same time | as Caedmon, and yet this legend had already grown up, and we find it in a copy of his history made in 737, | only two years after his death.

Bede tells many other picturesque stories, such as that very beautiful one about the conversion of Northumbria and the | parable of the sparrow, and that other which is familiar to everyone, even to those who know very little history, telling how Pope Gregory was || moved to send missionaries to Kent 4 to preach to the English.

Bede, like most learned men of his time, wrote his history in Latin, but | it was translated into English by order of King Alfred, who felt that his people ought to read about their country in their own language. | And it is principally to King Alfred also that we owe the "Anglo-Saxon Chronicle," the first attempt in our tongue at a contemporary record | of events. About the middle of the seventh century the monks of Winchester had begun to write down a diary of events, very meagre at || first, with only a few words in each entry.— 5 *The Home-Reading Magazine.*

37. REGIONAL SURVEYS IN RELATION TO GEOGRAPHY

THIS is perhaps primarily a gathering of those who, in some way or another, whether at the beginning of their careers or later on, have learned to appreciate the influence and the point of view which Professor Geddes represents, and I should like to take the opportunity, in his absence, of expressing my great debt to his unequalled power of felicitous suggestion, to his greatness as an interpreter, an illuminator.

It was once the privilege of the few to be brought into contact with the broadest and most serene stream of European tradition through a classical education, and this is still the opportunity for those who work for Oxford Greats. Probably only the better pupils really felt this influence, and for the rest it was hard, useful drill. But at any rate there was the possibility. It can be argued that the modern movements in education made that possibility more remote; they have been nearly all in favour of a more intense contact with narrower streams, often less serene and majestic. It seems to me that Professor Geddes has made it his central aim to spread the great stream in new ways if the old ones have been blocked. Here comes in, as I see it, the relation of Geddes' work to that of the geography teacher. The geographical spirit pervades a great deal of what is left us from Greek thought, and it seems possible to do a great deal towards making geography a channel for that stream. Far be it from me to think of suggesting an Act of Uniformity as regards geographical method; on the contrary, I feel strongly that the adaptability of the subject to the teacher's talent and opportunity is greater than that of most other subjects, and that it is this adaptability which is one of geography's chief claims upon the educationist. But if geography can be treated as a broadly humanist subject, especially in close association with literature, history and art, it can become a potent spiritual influence, promoting refinement of thought and breadth of appreciation, and thus contributing most effectively to good citizenship.

Take, for example, the geography of cathedrals. We find the mediaeval builders at first copying in small stones the mighty works of the Romans who had gone before them. Then, not content with that, they worked on step by step to the Gothic style, which let them build on a great scale, in spite of the smallness of the blocks their weakness in engineering forced them to use. But, near the Mediterranean, where the Roman influence was strongest, the advance to the Gothic was never really completed, and we find the Gothic cathedrals in the Paris Basin, that melting pot of all European traditions, contrasting with the Romanesque efforts of the South. The one is the mother country of the Revolution, the other includes the retreats of Feudalism. The relation of all these facts of the most vital importance to physical facts and features is so real and so direct that it shows us how very closely geography touches the main stream of our civilisation.—*The Geographical Teacher.*

38. THE WRITING OF AN ESSAY

WITH these considerations in mind, we may proceed to the discussion of one or two essays by eminent practitioners, in the hope that we may at least partially understand their method and workmanship. I shall commence with an essay from the *Saturday Review* of old time. It is anonymous, but there can be no doubt as to its authorship. The subject is "Favourite Authors," and I propose to give, in the writer's words as far as possible, a condensation and epitome of the piece:—

FAVOURITE AUTHORS

(1) There are many people with such flaccid minds as to be incapable of deliberate preference either in literature or anything else. The people who read with intelligence and edification are still a very tiny minority. The minds of many women are not roomy enough to contain at once a vigorous taste for books and a just interest in their various duties.

How many | husbands, even of the educated sort, would like their wives to be great readers? Men, as well as women, depend very little upon books. They | think that experience of life and the light of nature together reduce books to the rank of a sort of luxury which we can do || either with or 2 without.

(2) Those who do occasionally read books often fail to pay due attention to what they are reading. Only one in | a thousand does so. The vast majority pronounce sentence without hearing the evidence. They, perhaps, by an unlucky chance, fell asleep over the part which | contained the very pith and gist of the whole. For this reason a good deal of the strong preference which one hears professed for this | book or that, or the vehement admiration for one author or the other, must be taken with a large allowance.

(3) Favourite books are often || very poor books. A 3 writer who has so very little and such poor stuff to give to the world as Mr. Tupper is a favourite | author of this country. No human being who can read Mr. Tupper and enjoy him could possibly enjoy any other author. After all, it is | better to enjoy a halfpennyworth of skim milk than to enjoy nothing at all. There is more nourishment probably in blue milk than in pure | water.

(4) Many people talk of a conventional enthusiasm about poets and philosophers whom they do not understand. They pretend to like writings which they || are quite 4 incompetent to fathom or even to get an inch below the surface of.

(5) Authors may be encouraged by a certain amount of | praise, but they ought to get on very well without it. A poet, say, is enchanted to find that a lady thinks his production all | that is profound and rich. She sits with reverence and admiration at his poetic feet. But presently he finds that he is not the only | poet whose image has a place in her temple. In the next niche to his own is the author who of all authors he thinks || the stupidest, emptiest, and most generally 5 contemptible.—*British Weekly.*

39. ORGANISATION OF THE ENGINEERING INDUSTRY

THE constitution of the association would require careful framing, and ample funds for its work should be secured in the form of contributions from members. | There should be an annual subscription not of uniform amount for each member, but graduated according, and in proportion, to the capital or the number | of employees of the member, and each member should have a vote or votes at meetings of members in proportion to the amount of his | subscription. An annual subscription would provide an income of £300,000. Membership of the association should be restricted to British manufacturers. By this || is meant that every individual manufacturer and every member of a firm, and a large majority, say, three-fourths, or some other controlling proportion of the | beneficial owners of the share and debenture capital of every company, seeking to become a member, should be British subjects. The general management should be | in the hands of a thoroughly competent business man of unimpeachable integrity under the direction of a representative and periodically elective council, and the management | of various departments of the association's work should be entrusted to competent managers directed by committees of the council. Articles of association and regulations, providing || for these 2 and other usual matters would have to be carefully drawn up to ensure the proper working of the association and the conduct of | its meetings.

The association should have a central bureau or exchange at headquarters and should also have bureaux or exchanges in the largest towns in | this country and in various British dependencies and foreign countries. In the home bureaux and exchanges inquiries and information would be received and thence distributed | through headquarters to the other bureaux and exchanges and to members; periodical reports would be received from other bureaux and exchanges, both home and foreign; || and there would be offices, a meeting 3

room, committee, smoking and reading rooms. Possible customers from abroad would be encouraged to visit these premises of | the association and would be furnished with information of makers of various machines. Local committees would look after the immediate and special affairs of the | bureaux and exchanges, but, of course, would not have priority in access to information. The colonial and foreign bureaux should, so far as necessary and | possible, be on similar lines to those at home. In countries of sufficient importance an engineer, who would also be a personage of considerable local || influence, and wide as well as local experience, would be at the head, with a technical and commercial staff and with correspondents in various towns. | In countries of less importance the head would be an engineer of wide experience with an intimate knowledge of local requirements. These bureaux should be | in close touch and work in harmony with the British consul, the commercial attaché, the colonial Government and the British chambers of commerce, as the | case might be ; and would do propaganda work in the interests of British engineering, including the pointing out of the advantages of buying British machinery, || and of prospective purchasers placing their inquiries in the hands of the bureaux.—*The Electrician*.

40. THE RED CROSS SOCIETY

HOWEVER efficient an Army Medical Service may be, the help of a Red Cross organisation is—and ever will be—a necessity. All those who | are familiar with the operations of the Army Medical Department will admit that its work has been beyond praise and will own, indeed, that it | could scarcely be surpassed.

No Army Medical Service can be maintained in times of peace upon a war footing. There is evolved in such times | an elaborate scheme for expansion in war ; but one prominent and inevitable feature of that scheme is the enrolment of a vast body of *personnel* || from the civil population in the form |

of doctors, nurses, orderlies, motor drivers, clerks, cooks, dispensers, and the like. In such work a civilian society | can act with greater ease and promptness than can a huge organisation like the War Office, and thus it is that in the supply of | *personnel* the Red Cross Societies have undoubtedly rendered sterling service. In the furnishing of medical and surgical comforts also the Red Cross Societies are untrammelled | by those very necessary forms and procedures which must be observed by a Government body dealing with public funds.

In the matter of *personnel* the || Red Cross Societies provide 2
a vent for that ardent sympathy which the people of this country feel for the wounded soldier and, at the same | time, make practical that bounteous eagerness to be of service which has been so glorious a feature in this unexampled campaign. In this eagerness to | be kind, to do something for the wounded and the sick, the men and women of Britain and of Britain beyond the seas will not | be denied. They insist upon taking their share in the work of mercy ; they demand the right to assist ; they decline to sit still with || listless hands. This 3
resolve of the generous folk of the Empire is the foundation of all Red Cross work, and it has expressed itself in | a way of which the country of Florence Nightingale may well be proud.

At the moment of the outbreak of war the offices of the | British Red Cross Society and of the Order of St. John became crowded with eager men and women, who begged for " something to do." They | came not in hundreds but in thousands. Such a crowd even London never before has seen, for never has it witnessed such a deputation as || this that clamoured to 4
speak on behalf of the compassionate heart of the people of England. Many could do little ; many had no thought of | the manner of their service ; but they all came with ardent faces and open hands imploring to be allowed to do something for the soldiers | and sailors who were fighting for their homes. Kindness, however, in times of stress, is of little value unless it be organised. " He is my | friend that helps me and not he

that pities me." It is the primary business of the Red Cross Societies to organise the generosity of || the country, to 5 economise it, to direct it into proper channels, and to prevent that overlapping and that waste of energy which is inevitable when no system of control exists.—*The Times*.

SECTION IV

110 WORDS PER MINUTE

41. MEETING OF AN OIL CORPORATION

GENTLEMEN, I suppose, as usual, you will take the report and accounts as read. This being the first occasion since the formation of the company that an opportunity has been afforded of laying before the shareholders report and accounts, I think it will be convenient, before going into the figures in the balance sheet, to explain to you the reasons for forming your company. As you probably are aware, there were until lately 186 firms working in the Baku oilfields region. Almost the whole of this oil was sold on the spot in Baku to two or three firms, who then treated it on works which they either owned or held on lease, and then exported the products of naphtha, both to the interior Russian markets and abroad. The great majority of firms had no trading organisation whatever, and it was therefore natural that the dominating position was held by a few firms who had their own commercial organisation on the interior markets of Russia. Owing to these causes the prices for products made from crude oil had no rational relation to the prices of the crude oil itself, nor was there any relation between the prices at Baku and the prices on the open markets.

The Baku oil producers have repeatedly held conferences on this abnormal state of affairs, but were unable to find any remedy, because in order to send their oil products into the interior of Russia it was necessary to create a strong organisation able to compete with the firms already in the field, and for that purpose it was necessary to have disposal of or to control very large quantities of products of naphtha, and notwithstanding all the efforts of Baku firms they could not succeed in obtaining these products under uniform conditions

or terms. | Endeavours were also made to sell naphtha in Baku produced by several firms through one office only, and similar arrangements were arrived at by owners of refineries || 3 which remained outside the markets of sale, but all these were palliatives, and experience showed that none of those arrangements were staple, and at the first opportunity they | were infringed. Meanwhile the position in Baku became increasingly acute ; the firms who did not themselves export their products were compelled to sell the naphtha at prices which | were fixed arbitrarily, and the prices constantly fell and at last reached limits destructive to the industry. Thus, the mean price in 1910 amounted to | 15,000 kopeks, while in January, 1911, the price was only 14,500 kopeks. Under these conditions the oil industry was threatened || with a 4 serious crisis which would affect the whole economic life of Russia, and, as a matter of fact, the crisis broke out and the Government was compelled | to call an inter-departmental conference under the chairmanship of the Minister of Commerce and Industry, for the consideration of the question as to the ways and means by | which the crisis in the naphtha industry could be overcome. There is no doubt that if the crisis had continued a very considerable number of firms would | have been unable to carry on their business, and as a consequence the output of oil would have fallen to an extraordinary extent and many deposits of || naphtha be damaged. 5

—*The Times*.

42. THE ELECTRIC LOCOMOTIVE

THE first thing to be proved in any proposal for a change from steam to electric traction would be the ability of the latter to comply with traffic | requirements, and for the purposes of this essay, these will be classified under three headings, namely, the suburban passenger services, the long-distance passenger traffic, and the fast | and slow freight services.

So far as suburban passenger traffic is concerned, electricity has already had a fair chance of showing what it can do,

and the fact of its extension to so many suburban lines throughout the country affords ample proof that its inauguration has been attended with success. The advantages of an electrically-operated suburban traffic are too well known to be gone into in much detail ; but it may be stated that the principal justification for expenditure incurred in this respect is that line capacity can be greatly increased as a result of the introduction of short automatic block sections, the elimination of certain shunting operations, and the quickening up of others, and the rapid acceleration and deceleration at frequent stopping places en route. When we turn to long-distance express passenger traffic, however, we find that the conditions are altogether different. Here the great factor is speed, and in this connection the steam locomotive still retains the advantage, as its great elasticity enables higher speeds to be attained than has yet been found possible when electric traction is employed. With the rapid strides now being made in electrical engineering science, however, it is surely not too much to hope that this difficulty will prove but temporary in its character, and that before long a motor will be designed capable of attaining speeds of from 70 to 80 miles per hour with a reasonable load, which for all practical purposes can be taken as the maximum for steam locomotives.

Looking at the proposition from an economic point of view, we find that weight for weight the first cost of the electric locomotive is about double that of steam ; but if electric locomotives were manufactured on a large scale, this figure would probably undergo considerable reductions. It must not be forgotten, also, that for the same adhesive weight the electric locomotive may actually weigh 30 to 40 per cent. less than the steam locomotive owing to the whole of the weight being available for adhesion, and as electric repairs and renewals cost less, the net result of the two classes of locomotives is somewhere about the same. While the passenger steam locomotive only runs an average of 27,000 miles per annum, however, spending 75 per cent. of its time out of active service, the electric locomotive, which need only be in the shops

for one month out of twelve, does not spend more than 50 per cent. of its time out of active service, thus enabling it to run at least 40,000 miles per annum, or half as much again as the steam locomotive. In this country, also, the cost of operation is practically the same whether steam or electric traction is employed, and in countries like Italy where coal is very dear, considerable economies would result from electrical operation owing to the fact that the coal consumed in producing electricity at a large modern generating station is less than half of what would be used by a steam locomotive in carrying out the same amount of work.—*The Railway News*.

43. THE FINANCE OF THE COCONUT

THE taxation of luxuries which has been put into force by the Government, will inevitably mean not only a diminution in their consumption, but will seriously affect the finances of their manufacturers. The World of Commerce is about to enter another phase of the financial earthquake which has affected every trade and industry save alone those concerns which are engaged in providing the staple food of the community. The complexities of the financial situation are, therefore, destined to become even greater than they have been and it is more than ever necessary that the investor shall proceed with the utmost caution.

In these times, when opportunities of profitably and safely investing money are becoming more and more scarce, and when the members of the Stock Exchange are transacting but little, if any, business, it follows that there is a paramount necessity for some method of scientific money making to be evolved and many fantastic schemes have been suggested to fill the void. The whole of these, however, are valueless from the point of view of security as they take too much for granted, and what is needed is an investment safe and sound and free from any element of loss or risk.

Now just as Nature compensates in one way for a deficiency in another, so there is a natural Law || operating in finance and commerce which tends to maintain an even balance. In the common parlance of the people, "One door never shuts but another one opens," and | although many of our former avenues of money making have been closed, others have been opened of which we have had no previous knowledge. To move from the | general to the particular, we will ask the investor if he has given any thought to the matter of the decline in some provision stores, and if | he cannot see any economic reason why these concerns should have gone downhill, whilst rivals have forged ahead and made larger profits than in former years. ||

It is not a matter of luck or advertising, but it can be said with certainty to be simply due to the fact that many of the companies | which now feel the draught, made a grievous miscalculation and committed a great error of judgment when they failed to appreciate the potentialities of nut-butter, whilst their | rivals were engaged in supplying it to the people. In these days of increased cost of living, the people have been compelled to seek about for substitutes | of a cheaper character and impelled to experiment doubtless by the advertisements of the firms we have mentioned, they have tried nut-butter, and coming to scoff have || remained to praise.

Manufactured from coconuts and milk, this new—or comparatively new—article of commerce has at once established itself for all time as the staple article | of food. Like ordinary dairy butter in appearance, it is more palatable, contains greater food value, cannot deteriorate, and what is of final importance, only costs a small | proportion of the price of the cheapest butter, and at this price it yields to the manufacturers a profit greater than any other article of food. Here | then, it would appear, is to be found that ideal investment of which the public are so much in need.

The manufacture of nut-butter, which formerly was carried || on on the Continent, has become an English home industry.—*The Financial Critic.*

44. A REVIEW OF A BOOK ON RURAL HOUSING

DR. SAVAGE'S book is an exceedingly interesting and clear exposition of the present condition of affairs, illustrated mainly from the County of Somerset ; and it explains sympathetically the inadequacy of our present attempts at improvement. It was hoped that a conspectus of the situation and a basis for reform might be attained through the complete inspection of housing conditions made incumbent upon local authorities by the Act of 1909. Unfortunately this inspection has in most districts been very inadequately carried out owing to the amount of work it would entail. Dr. Savage quotes the case of one medical officer of health who found that the inspection and re-inspection of 524 houses required no fewer than 4,822 visits. In extremely few districts have additional trained inspectors been appointed to do the work, and many rural districts have always been understaffed. The result is that the inspector does his ordinary work, and only puts in any spare time left over for housing inspections. Another difficulty lies in the nature of the sanitary inspectors themselves. The majority of these officers are trained capable men with high ideals as to their work. There are, however, still a good many of the old, inefficient type appointed at a time when anyone who was prepared to accept the scanty pay, and who was unlikely to be too zealous, was thought good enough for the requirements of rural hygiene. Many are men without any training in public health, with as their chief qualification what they call tact, which on analysis resolves itself in the conviction that it is better to let sleeping dogs lie. They deal with insanitary conditions when they are brought to their notice to the best of their ability and in the light of their low standards, but as one unwittingly defined his attitude to me, " he did not look for trouble ! "

Insecurity of tenure of the medical officer of health and the sanitary inspector is another stumbling-block in the way of efficient administration. These officers have to condemn

cottages or cause money to be spent upon cottages which in many cases either belong to members of the Council of which they are the paid servants, or belong to persons who are in a position to powerfully influence the members of the Council. The effect is to make the officer have to balance his duties to the community against his means of livelihood, a most unfair position in which to place any person.

Dr. Savage lays stress upon the difficulty which often occurs of proving that at any given time more houses are needed. If the young people cannot get houses they drift away to the towns or emigrate, and then the local authority triumphantly points to the fact that there is no one wanting a cottage. For it is the local authority which is reluctant to incur any expense which may lead to an increase in the rates, and so villages cease to develop, and even diminish as existing houses become unfit for habitation. Even with a County Council in favour of effective action the disinclination of District Councils to run any risk of burdening the local rates is such a powerful dead-weight that the net result of an immense amount of inspections and special inquiry has only been to put in motion machinery to build a very few houses.—*Charity Organisation Review*.

45. ACQUIRING A VOCABULARY

A MEAGRE vocabulary will serve for some purposes. But the English language is opulent in words, and there is no reason why most of us should not cultivate an intimate acquaintance with them. If we have literary ambitions we may as well relinquish them at once unless we are prepared to master the medium through which literature expresses itself. The able writer is the man who can control and manoeuvre with skill and effectiveness regiments and battalions of words. With a large army available he can count on achieving the victories he hopes to win. For him an extensive vocabulary is a necessity. The journalist who is content to remain in the lower ranks of his calling may

manage with a comparatively inconsiderable grasp of the language, though he will sometimes find himself seriously hampered by reason of | his deficiency in this respect. But if he aspires to the more responsible duties of journalism he will discover that a wide and thorough familiarity with words will | be absolutely essential. The same discovery is one that the shorthand writer and the typist have to make. To both, the unknown word comes as an obstacle. | Its sudden appearance stops the flow of the shorthand writer's pen. It is strange to his ears, and he does not know how he shall reproduce it. || Examinations in shorthand and typewriting 2 reveal shortcomings due to the lack of a knowledge of words that can hardly be called uncommon words; and unfortunately the same lack | makes itself too often evident in everyday work. Yet the shorthand writer who is to undertake successfully the best work, the most responsible and the best-paid work of | his profession, must at all costs make himself the possessor of a large vocabulary. It is, indeed, desirable that all of us should do so. We should | feel it to be a patriotic duty. But the duty is specially imperative in the case of shorthand writing. It may involve a little trouble, but the || trouble is worth taking. 3

The practical question which confronts the student who has become conscious of the inadequacy of his equipment of words is how shall he proceed | to make good his deficiency? There are several things that he can do. In his ordinary reading, even the reading of his daily newspaper, he can make a | note of the words that meet his eye with which he realises that he is imperfectly acquainted. If at the moment a dictionary does not happen to | be available he may underscore the strange word in pencil and look up its meaning and its derivation afterwards. What it signifies, from what source it entered || the language, to what other words it is related, 4 how it is spelt: these are facts that he needs to make his own. A little note-book with alphabetic | divisions is a useful pocket companion. Into that book may be written the newly-collected word, with its meaning, which may be placed there

in shorthand with the | phonographic form for the word itself. It may then be looked at again and again until it is indelibly stamped on the memory. The pursuit of words | when once it has been started usually proves to be a fascinating pastime without losing its utility. But words have to be learned as well as to || be looked at.—*Pitman's Journal*.

5

46. HOW PLANT VARIETIES ARE ORIGINATED

THE observant botanist who travels from country to country or even from district to district, cannot fail to be struck by the infinite variety of vegetation and by | the fact that its very diversity depends largely on its surroundings. In alpine regions, stunted, bright-flowered plants prevail, and often their leaves are hairy; deserts, too, are | rich in dwarf vegetation, and spiny or succulent leaves abound. In short, the desert, the mountain, the forest, bog and saltmarsh all possess a characteristic vegetation, which | is typical of similar districts the world over. The soil, climate, and altitude all have a definite effect on the vegetation, and tend to create varieties. These || varieties arise as the result of an attempt on the part of the plants to counteract the deleterious effects of their surroundings.

Plants transported, either naturally or by | design, from surroundings of one kind to surroundings of a totally different nature, say from a moist climate to a desert, will die unless they have the power | of adapting themselves to the new conditions, but it is fortunate that plants as a whole possess this adaptability to a marked degree. In the case of | cultivated plants, there is not so great a need for adaptability, the husbandman, if he knows his work, supplying the deficiencies of nature. All this is well || known, even to those blessed with limited powers of observation. What is not so well known is that individuals of the same species vary. Each one, so to | speak, has its own facial expression, each one shows certain characteristic differences from its neighbour. When a row

of young trees are planted side by side in a |nursery, each tree does not grow in exactly the same manner as its neighbour, be the husbandman ever so careful to raise them under similar conditions. Some | trees will shoot up far above their fellows ; some will branch freely, others but little ; large and small leaved trees will arise. Each tree will exhibit some || 3 variation ; it may be exceedingly slight, but there it will be, and it is simply an adaptation to enable the individual to succeed in the struggle for existence. |

The supply of food, water and light, together with temperature, altitude, maritime growth, and climate, singly or several together, all tend to produce variations in plants. Concerning the |importance of food supply in bringing about plant variation, Darwin says : " Of all the causes which induce variability, excess of food, whether or not changed in nature, | is probably the most powerful." Because food supply exercises such a powerful influence on vegetation, we cultivate and manure the soil, and when a true stock of || seed is desired, it is raised on poor, unmanured land. Excessive food produces an increase in size ; at first the increase is general in all the organs of | the plant, but continued rich cultivation may later lead to increase in one or more organs relatively to the others. Variations in shape, colour, texture, etc., are a | frequent aftermath of the original increase in size. Lack of food conversely produces a reduction in size, and, as a consequence, a general weakening. The physical character | of the soil, quite apart from the effects of food and water, has a considerable influence on variation. Pliny is said to have recorded the same effect || as known and utilised in Greece in his time.—*The Botanical Journal*.

47. MEETING OF AN INSURANCE COMPANY

I TOLD you last year that we proposed to cut down our foreign business, and arrangements to this end were made early in the year, and then the | outbreak of war automatically

put an end to certain further business we were doing in Germany and Austria, with the result that the total reduction in foreign business is quite substantial. You will see from one of the first figures of the revenue account that the cost of terminating this foreign business was £12,000. This is a large amount to have to provide out of one year's trading surplus, but there is no doubt that our company is greatly strengthened by having done so. Fortunately the home business has been coming in in good volume and has more than replaced the foreign business given up. The arrangements we have made provide for a further reduction of the foreign business during the current year, but the amount to be given up is much less than was given up during last year, and the cost of running it off will no doubt be much less as well.

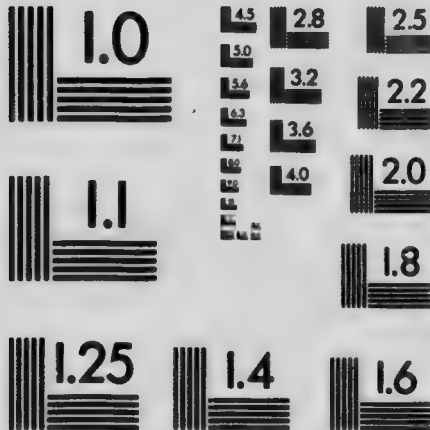
Our home fire business has improved in volume throughout the year, and our loss experience in this section was quite normal. The loss of profits business has also been satisfactory. The re-arrangement we made two years ago has now borne fruit, and the loss ratio of this business has fallen to something approaching the normal expectation, and we hope for a continuance of this improvement. In the accident department the re-arrangement referred to last year has been amply justified. This department continues to give us the profitable results to which we have become accustomed, and the growth of the department is steady and satisfactory.

It has been my custom each year to say something with regard to the position of outstanding claims under the Workmen's Compensation Act—an important item, I think, particularly in view of the reputation enjoyed by this company for prompt settlement and early commutation of all claims involving continuing weekly payments. Last year I told you we had no claims outstanding which arose prior to the year 1912, and six claims only which arose in that year. Of those six we have settled five, so that now I can say we have only one claim outstanding which arose in the year 1912, and only seven which arose in the year 1913; none of these claims present any special difficulty, and ample provision



MICROCOPY RESOLUTION TEST CHART

(ANSI and ISO TEST CHART No. 2)



APPLIED IMAGE Inc

1653 East Main Street
Rochester, New York 14609 USA
(716) 482 - 0300 - Phone
(716) 288 - 5989 - Fax

has been made for them. When you recollect that we have a large and growing business in this || department, and that intimations of accidents are in consequence numerous, the small number of our outstanding claims proves that our declared policy of dealing with these matters finally | and promptly is no idle boast.

Two years ago I told you at our meeting that I hoped we had reached the stage at which our expenses would | remain more or less stationary, and it is gratifying that the accounts should show that our management expenses last year were no higher than they were in | the year 1912.

I think it is clear proof that our company is soundly managed that we have been able to secure a rapidly || increasing home income without any increase in the management expenses.—*The Times*.

48. OBSERVATION IN EARLY EDUCATION

“THE first thing for a boy to learn, after obedience and morality, is a habit of observation—a habit of using his eyes. It matters little what you | use them on, provided you do use them. It is said that knowledge is power, and so it is, but only the knowledge which you get by observation. | I do not mean to undervalue book-learning; but the great use of a public school education is not so much to teach you things, as to teach | you how to learn. And what does the art of learning consist in? First and foremost, in the art of observing. Therefore I say that everything which || helps a boy's powers of observation helps his power of learning; and I know from experience that nothing helps that so much as the study of the | world around you.” Such was the admirable advice given to the boys of Wellington College by the late Canon Kingsley. If this advice was appropriate to the boys | of Wellington College, how much more is it appropriate to the boys and girls attending our public elementary schools? Let us endeavour, in the first place, to arrive | at a clear understanding as to what is meant by the observation, and the habit

of observation here referred to. We gather all our knowledge of the || external world through the sensory organs—the eye, the ear, and so on. Some stimulus impinging on the special sense nerves; the theoretical light-wave on the mosaic-like structure of the retina; the sound-wave on the auditory nerves of the ear, for instance, excites these special organs, and the excitations are immediately transmitted along the sensory nerve-fibres to the brain-centre, where, or elsewhere, that incomprehensible something which we name soul, or spirit, or mind, translates them into what I may call, without much stress of language, the elements of knowledge. These elements of knowledge are to mental growth and development just what atoms are to chemistry, and || cells to botany and physiology. They are the elements, so to speak, from which those abstractions, the mental faculties—perception, understanding, reason, memory, imagination, and so on, are fabricated, and on which they are fed. Observation includes the three processes—excitation, transmission, and translation—to which I have just referred. Observation, therefore, constitutes the foundation of knowledge, and provides the elements by which knowledge is increased. Without this observation the mind would be a blank. “If,” says Thring, “we imagine a man, deaf, dumb and blind, to be gifted with the highest natural powers of mind, such a being, with all the avenues of observation closed, would remain a hopeless || blank, practically an idiot. His ear would bring him no messages to employ thought; no sweet voices of his kind would stir his pulses with joy; no music of bird, nor any sound would break the ghastly silence of his soul. His eye would gather no harvest of delight; his lips could not speak any impulse from within so as to become a moving power; thought, as we speak of thought, would be impossible for him. There can be no thought without material for thought, and it would be impossible for him to collect any material to think about. Observation is the conscious gathering of material for thought. It is || only another name for patient, well-directed work.”— *Irish School Weekly*.

49. CRITICISM OF A FINANCE BILL

It is therefore earnestly urged that Clause 34 (1) of the Finance Bill should be amended with the view of giving, at any rate, a partial relief, so | as to provide that the excess allowed on the pre-war standard of profits should be "one hundred pounds, or one-fifth, whichever be the greater," instead of only | £100. This would give the relief it is desired to afford the smaller trader, and would also give more equitable treatment to the larger trader, | whose business will probably be more difficult to conduct after the war, when he has to go out again into the markets of the world and recover, || if possible, | his lost customers, and when, obviously, he will need increased resources. Even under this proposal the Exchequer will benefit to the extent of two-fifths of his | excess profits, which will represent a tax heavier than that proposed to be imposed on any other class of citizen.

In Clause 36 (3) certain provisions are made | with regard to exceptional circumstances, but it is respectfully submitted that these are quite inadequate, and that unless the Clause is widened very serious hardships may be | inflicted upon traders who have exerted themselves to assist His Majesty's Government in relation to the supply of war materials. The vast majority of these firms have || had to sacrifice their ordinary 2 trade for the time being, and, as has been pointed out previously, it will be incumbent upon them, at some future time to | be determined by the duration of the war, to make efforts to recover such trade which must now be passed over and consequently left to competitors in countries | not involved in the war. Practically all of these traders would naturally have preferred to have been able to continue their normal trade, which, clearly, is the | trade upon which they and their workpeople must inevitably depend after the termination of hostilities. It is, therefore, of the most vital consequence to the welfare of || the nation that, whilst assessing them 3 upon excess profits earned during the war, care should be taken not unduly to cripple their resources for future effort. Obviously, | no provisions, however carefully they might be

framed, would entirely remove cases of hardship, but this very fact only serves to emphasise the submission now made that everything possible should be done to secure that, when the war is over, our manufacturers should be left in a position from which they can operate immediately and successfully in the process of recovering lost trade. One means of securing this would be by widening the provisions for dealing with excess profits. For instance, the || Bill contains no provision under which allowance can be made for increased output. In normal times a person or company may be able to earn reasonable profits by running the concern during moderate hours on five and a half days per week. For war purposes this person or company may be working overtime, or running a night shift, and as a result produce a much larger output. An increased output involves greater effort and responsibility on the part of the proprietor or proprietors, and it is consequently reasonable that allowance should be made for a greater profit. In the Bill there is no provision for this, and it is therefore || earnestly urged that words relating to an "increase of output" should be inserted.

—*Chamber of Commerce Journal.*

50. AGRICULTURE IN ITALY

THE annual value of the mild products is estimated at : Butter, £5,200,000 ; cheese, £16,505,000 ; by-products, £640,000 ; making a total of £22,345,000. The great bulk of this is consumed at home, as the foreign trade in dairy products only amounts to £3,500,000. The export of cheese is showing a steady if slow increase, having risen from 176 tons in 1871 to 3,000 tons in 1913.

That the || forests of the country are a source of natural wealth and that legislation affecting them requires to be well-designed and directed, only appears to have forced itself on the attention of legislators during the past ten to fifteen years. Up to 1877, each region had its own forest laws. In the year named uniformity was brought about by the adoption of a law, based on the opinion that in order to promote

forestry free competition is more advantageous | than monopolies and servitudes, and that when the demand was greater than the supply no lack of landowners would be induced, by the prospect of profit, to || grow timber. This law resulted in a great destruction of forests, because landowners, freed from restrictions as to sale, and driven by their straitened circumstances, immediately took advantage | of the liberty to sell and neglected to realise that they owed any duty whatever to posterity. In two years, the area of forests was reduced from | 12,000,000 acres to 7,500,000 acres, and by the successive freeing of various servitudes the area was later reduced to 7,200,000 | acres.

Only a small portion of the woods thus destroyed gave place to either fields, meadows or vineyards which would have increased the wealth of the nation. || The greater part were ruined by the excessive fellings to which owners were driven, and by subsequent haphazard grazing ; so that usually, after a few years, the lands | were abandoned to the action of water which leached away the accumulated fertile soil of centuries. More than one-third of the forests freed from servitudes have thus | been ruined, and another third is deteriorating, so that before long it also will disappear. In Calabria 77,000 acres of land was cleared, the timber burnt on | the spot as it could not be sold, and the land sown to rye, flax and potatoes ; and in one region of Sardinia 407,000 || acres of high forest were likewise felled and new growth destroyed by the unrestricted destructive grazing of all kinds of animals.

As a result, the sites of | many former belts of woodland have become bare, stony slopes, rocky precipices, or steep, bare clay banks, burnt up by the sun, which seem to baffle every attempt | to re-clothe them with forests by economical methods.

From time to time attempts have been made to counteract the great damage thus being wrought. The Government between | 1867 and 1904 reafforested 129,000 acres at a cost of £132,000—just one-twenty-seventh || of the area destroyed. —*The Estate Magazine*.

SECTION V

120 WORDS PER MINUTE

51. A RUBBER COMPANY

I HAVE now to pass on to the matter which has given your Board an enormous amount of anxiety and worrying work to get settled ; that is the deficiency in your guaranteed dividend. You can easily see how this has arisen. You have only to look at the quotations of trust stocks to-day compared with what they were prior to the war. Our sympathy was naturally with you at not being able to post you your dividend, but even had this company been willing to make up the amount, we were legally unable to do so, for we were making no profits, and no dividend can be paid except out of profits. We therefore had to dun our vendor syndicate who were liable for the deficiency, and I think I am justified in saying now, that the matter is settled and that they have met us very generously. I will go even further and say that I am glad the deficiency arose—not the cause of it, but the opportunity of making this settlement—for it gives us the opportunity of tearing up for £600 an agreement which at any moment, if rubber stood, or should in the future stand, at anything like to-day's price, might have reduced your dividend. In fact, it was rather a millstone round our necks, and it would certainly have stayed our hand if ever we were desirous of opening up more land. This is not at present contemplated, but we have about 14 square miles of fine reserve land which might be utilised for rubber, tea, coffee or any other tropical produce that you might hereafter deem it profitable to plant, not forgetting coconuts, for which I believe our land would be eminently suitable. If there is anything in this settlement which you do not understand, as your secretary and I did a great part of the negotiating leading up to it, I think we can

enlighten you if you will ask | the question. As it now stands, provided you pass the requisite resolutions, your dividend will be posted to-night or to-morrow. We must also not forget to thank our secretaries, Messrs. || J. A. Henderson and Co., for advancing the sums which were necessary to carry through all these settlements. The net result of all this to the Kwaloe Company is that | we will pay £600, plus interest, out of our first profits, and get the return of an obligation which under certain contingencies would have required the payment of | £22,500. It is true, not till after you gentlemen would have received 20 per cent. dividend in any year, but with present prices of rubber who | shall say that that contingency might not arise? Reverting to the accounts, you will notice that a contingent liability is mentioned by our auditors, who also refer to a further || liability in connection with the survey of the estates. That is a matter which we have already informed you is still under dispute, and against that, on the other side, | you will see an item of £600 which is deposited with a resident, and is therefore retained for settlement. We still hope that that amount will be sufficient | to settle that difference in the cost of the survey and over which we have had such a long dispute. In regard to calls in arrear, these amounted at 31st | March last to over £2,000, but they are now reduced to about £1,900. It will not be astonishing to you that there are still sums outstanding. ||— 5

The Financial Times.

52. MEETING OF A BANKING COMPANY

THE Chairman said that the directors were glad to present accounts showing an improvement in the last six months upon those preceding, when the bank had to cope with extreme | depression in all branches of business other than the export trade, which had shown great activity at very favourable prices in Argentina and Uruguay, and in the financing of which | the bank had had a considerable share. Business enterprise, however, was still—and they knew must so continue for some

time—greatly fettered everywhere by the clouds cast by the war. There was, nevertheless, a growing impression that appearances pointed to a gradual resumption of activity in those countries where the bank was chiefly interested—no doubt founded upon the promising state of affairs, agricultural and pastoral out there, which justified looking forward hopefully if the weather continued favourable. At all events, the position of the bank was sound and strong. They had had to provide again this year for some large losses arising mainly from their South American branches' business; they had also to write down their securities so as to face the general decline in quotations on this side; and they had had some losses in connection with their valuable French business. All of this had been met chiefly out of the year's profit, and, to a moderate extent, out of their useful contingency fund and their balance brought over from last year. They had thus been enabled to improve the final dividend and to show a gratifying carry-forward, while their assets, to the best of the directors' belief, might be safely looked upon as representing the value at which they stood in the books of the bank, for the Board's rule continued to be to make ample provision for all known bad and doubtful debts. An important feature, as reflecting upon this value, was the fact that, owing to the failures which had occurred so largely, the position generally had been greatly cleared and benefited.

There was an available balance of £400,000 odd to deal with, which included, of course, the balance brought over from last year, and they showed in profit and loss account amount of income tax incurred, namely, £47,000, and also that of depreciation in value of securities held in London, provided for by £30,000. As the interim dividend foretold, the directors had at last had to relinquish their time-honoured custom of paying the shareholders' dividends free of income tax; earning power at the present time did not admit of it. The directors were the more gratified, therefore, that circumstances had enabled them, with the devoted help of their managers and staff abroad and at home during a period of

marked difficulty and anxiety, to recommend that day a dividend of 9 per cent. for the six months, bringing the distribution for the year up to || 15 per cent. They regretted that in order to achieve this 15 per cent. they had not been able to carry forward to next year an amount equal to the amount brought forward from last year, but they thought the present amount of £270,000—the amount they had for the purpose—commensurate with the risk the bank incurred. | He hoped the figures shown in the balance sheet pleased the shareholders. An interesting point was that, notwithstanding the war, the figures showed an increase over those of last year. | It was their custom to be strong in cash in hand, so their balance was what the shareholders might have expected—close upon 50 per cent. of their total deposits. || —*The Financial Times.* 4 5

53. LIMITED LIABILITY FOR SMALL TRADERS

THE benefits and safeguards conferred by limited liability upon the entire business community, whether buyers or sellers, capitalists or investors, are the better appreciated as they become more widely known. | When trading is carried on under the rules and regulations appertaining to joint stock enterprise the individual members of the company, whatever its size, scope or character, enjoy absolute immunity | from liability over and above their respective holdings. At the same time those who have business relations with the undertaking, involving necessarily questions of responsibility and credit, are enabled by | means of the particulars filed at Somerset House, to satisfy themselves as to the company's financial status. It is satisfactory to find that these considerations have within recent years carried || weight with business men in every department of trading and commercial activity. |

Thanks to the passing of the Joint Stock Companies' Consolidation Act, 1908, the advantages attaching to the | system of limited liability have been brought within the reach of small traders and others, who have hitherto been precluded by the modest proportions of their businesses and the narrowness |

of their means from availing themselves of the beneficial arrangements provided by the legislature for the protection of their interests. The Acts which have been passed to govern trading in this particular form constitute no insignificant part of our Statute Law during the last three quarters of a century. Although prior to 1908, private companies were not unknown the opportunities given to small traders of converting their business into private limited concerns, and thus facilitating the division of the business amongst the members of a family, while at the same time disturbing but very slightly the private character of the undertaking, were not generally understood. On the passing of the 1908 Act, however, these advantages became more widely known, with the result that the number of private companies which has come into existence on these new lines has grown by leaps and bounds. At the present time there are thousands of such companies, comprising millions of capital; and it is not a big stretch of imagination to suppose that in a few years there will be very few firms who will have failed to take advantage of the Act. The risks that a person takes on entering into an ordinary partnership are many and not too well known, particularly by young men, who, having come into money, wish to embark in business. Let me take the case of a young man who, on attaining his majority wishes to enter into a partnership. Although he only puts £1,000 into a business, he is responsible not only to the extent of the capital he has put up, but also to the extent of his whole belongings, for the liabilities incurred by his partner, should the enterprise prove unsuccessful. On the other hand, if he insists upon the concern being formed into a private limited company (and he and his partner could do this, two members only being necessary to form such a company) he limits his liability, and is exempt from bankruptcy risks. Moreover no claim can be made on his personal property or belongings, except to the extent of his liability, for uncalled capital on the shares he may have taken up. In these circumstances he would be free to buy an interest in as many concerns as he pleased, and also to take an

active interest in | the working of each of them, either as a managing director, or in any other capacity. His liability in each would be limited solely to the extent of his holding. || — 5
The Financial Critic.

54. HOTEL COMPANY MEETING

GENTLEMEN,—I am pleased to have an opportunity of meeting you again, and of explaining the abnormal difficulties we have had to contend with during the past year. I am | sure you will readily appreciate the difficulties with which we have had to contend in hotel business in London. A large portion of our customers are business men, provincial families | on holidays in London, and Americans and colonials. The former business, I am glad to say, we still retain ; holiday-makers, however, have not been coming to London, while, of | course, we do not expect to see many Americans and colonials until the war is over. There has been no London season since the war commenced, and practically no social || functions to | attract our clients. As you know, in past years we have obtained a large revenue from dinners, dances, receptions, etc., held at the Wharncliffe Rooms, but during the | past year very few functions indeed have been held there. The present times are much too grave for gaiety. Most of us have relatives or friends actually in the war, | and there is an ever-present anxiety in our minds. As we point out in our report, the Hotel Bristol was taken over by the French Government on the outbreak of | war, and is still in their occupation. We shall, of course, obtain compensation, and we hope to get at least a sum equivalent to the profit we should have made || 2 in a normal year, and the cost of putting the hotel in the same condition as it was when it was taken over. When a settlement is made the sum | received will go to the credit of that current year's accounts.

I am pleased to tell you that the provincial hotels of the company, with one exception, all had a | good year. During the quiet winter season we were fortunately able to arrange with the military authorities to billet a considerable number

of men in some of our hotels, this being so arranged that it did not interfere with our ordinary business, the men leaving for their summer camps in good time to enable us to redecorate the rooms and have everything in good order before our season proper commenced. Unfortunately, Whitby, like all East Coast resorts, suffered severely from the war during the autumn of 1914, and the senseless and brutal bombardment by the Germans in December last destroyed all chances of a good spring and early summer season. You know, I think, that the hotel was not touched. Bearing in mind all these facts, I am sure you will agree that under the circumstances we have done very well. You will, no doubt, want to know what we have done in the way of reducing expenses to meet the decrease in the business. We have given much anxious consideration to this subject in consultation with our managers, and have now got to a point below which we are satisfied it would be impossible to go without doing harm to our business. It is an unfortunate fact that expenses cannot be reduced in the same ratio as the fall in business, on account of the many charges which remain the same, whether we do a large or a small turnover. We have had great difficulty in getting an efficient staff, and this has caused a considerable relative increase in our wages bill. All commodities, too, have gone up enormously in price during the past year, and unlike most businesses, when costs go up we are unable to pass these on to our customers in face of keen competition. —*The Times*.

55. CORPORATION OF INSURANCE BROKERS AND AGENTS

ONE very important feature which we have dealt with during the past year is that of the new agency section. In the nine years since we have been established the efforts of the Corporation have been mainly devoted to securing the support of insurance brokers and those holding large agencies. Now that we have gathered in the greater portion of the large

firms, it is very desirable that some alteration should be made. At many meetings we have discussed this question. It has been constantly suggested to us that something | should be done to secure as members of our Corporation that large number of professional men throughout the country who hold agencies for one or perhaps two companies, but the || amount | of whose insurance business does not entitle them to come under the full membership section of our present articles. We felt the force of this, as it is obvious | that the larger the membership we have throughout the country the greater would be our strength and influence. It was suggested by many that a new Association should be formed | to embrace such agents, but on careful consideration this idea was abandoned, as it would tend to more expense and to weaken the strength of our Corporation. After consulting with | counsel on the point, we decided to alter our articles and bring in this new class. As the report says this new section has proved popular and some hundreds of || new members have been admitted as incorporated insurance agents, but they are not entitled to use the initials after their names as in the case of brokers and members. 2

The | other important matter is the question which was in our minds when the association was originally formed and that is the Bill to improve the status and position of insurance | brokers and agents throughout the country. For a long time past this has been under serious consideration, and last year we drafted a Bill which was the result of many | months of anxious work and thought. But when we came to focus our grievances, and the anomalies existing in the insurance world, it was very difficult to draft clauses for || a Bill giving effect to our aims. We consulted one of the best firms of Parliamentary solicitors and eminent counsel, and with their aid completed the draft ; a précis was | issued early last year and copies were sent to the insurance offices and the press. We were not bold or sanguine enough to believe that the Bill would please all, | as we fully realised the difficulty at once of clearing away those evils which had obtained such deep root 3

in every-day insurance life. As we expected, the Bill met with much criticism—some friendly, some otherwise—but these criticisms were carefully considered and tabulated. The prevailing view was that we were asking “too much at once,” although in our Bill we did not ask for more powers than those which had recently been embodied in Canadian and New York State laws; but we felt the force of these criticisms and decided to draft a new Bill with more modest claims, confining ourselves to the questions of licensing and registration. A new Bill on these lines has been drafted and approved by counsel, and a copy has been sent to the Chancellor of the Exchequer, who referred it to the Board of Trade for their consideration. The Board has replied within the last few weeks and suggests that it had better be deferred until after the war, when such matters can be carefully considered. The Board added that in the event of the proposals being put forward later Mr. Runciman would require certain further information.—
Journal of the Corporation of Insurance Brokers.

56. A CHEMICAL COMPANY

GENTLEMEN, before dealing with the accounts, which I presume you will take as read, I think it only right to refer to the sad loss we as directors and you as shareholders of the company, sustained in the regrettable death of our late chairman, Mr. Dorman, who had been a director for fourteen years and chairman for six years. Mr. Dorman had always taken a keen interest in our company and gave considerable time and energy to it, and I feel sure I am voicing the feelings of your directors and the shareholders in tendering to his family our sincere sympathy in the loss they and we have sustained. Mr. Dorman's death explains my position in the chair to-day, as the directors did me the honour of appointing me chairman of the company—a position which I have since endeavoured, and will continue to endeavour, to fulfil with the same attention to the affairs of the company as my predecessors have done.

With your permission I will now deal with some of the items in the accounts before you, although | my remarks will be brief, inasmuch as the results of the year's trading are so satisfactory that they do not call for comment other than of a satisfactory nature. On | the liabilities side of the balance sheet the only item, apart from the balance to the credit of profit and loss, with which I will deal later, that need be || 2 commented upon is sundry creditors £7,700. This stands in the ratio of about one-fourth of the item of sundry creditors on the assets side, and is | therefore quite satisfactory.

Turning now to the assets side, you will observe that we have written off £700 for depreciation, which is deemed by the board and the | auditors to be ample. Our stocks on hand amount to £15,000, and are taken in at cost. Our cash and bills receivable amount together to just over | £21,000, which is, of course, most satisfactory and will enable us to purchase stocks on the best terms possible by paying prompt cash for everything and take advantage of || the best discount obtain- 3 able. The last item on that side, viz., expenses on reduction of capital, £300, we propose, as you will see from the report, to write | off. Now the only other item I need refer to is that of profit for the year, amounting to £9,000. This, compared with the profit of the previous | year, which amounted to £2,000, is the most satisfactory feature in the accounts before you, and while we, as your directors, feel proud of the result, we at | the same time attribute it primarily to the foresight and energy displayed by our managing director, Mr. Lacy, who, seeing that owing to the war foreign and other competition would || be eliminated, bought large stocks advantageously, 4 which, by excellent management, he has been able to dispose for us on very satisfactory terms. We think it only right to say that | our sincere thanks are due to Mr. Lacy for the good and profitable work he has done during the past year. He concluded by moving the adoption of the report | and accounts.

The Deputy Chairman (Mr. Frederick Richardson) seconded the motion, and after a short discussion, in the course of which satisfaction was expressed by shareholders with the result of |

the year's working, the report and accounts were unanimously agreed to.

The Chairman next moved the payment of the proposed dividend of $7\frac{1}{2}$ per cent. on the year's profits. ||—*The Times*. 5

57. MEETING OF AN ASSURANCE COMPANY

It was very satisfactory to be able to report that the expense ratio in both branches had again been reduced.

The year's business must be considered as highly satisfactory, in | view of the exceptional conditions. To the casual observer, accustomed to the enormous figures of the Prudential, it perhaps presented but few striking features. He would impress upon them, however, | the fact that the premiums received in the Industrial Branch during a year, of which five months were occupied in warfare, exceeded those of the previous year by over | £300,000. This was a great achievement, and a wonderful tribute to the outdoor staff of the company.

Referring to the subject of depreciation in investment prices, the Chairman || stated they had in the past carried | large sums in Investment Reserve Funds in both branches for the purpose of protecting the funds against the continued fall in prices, and | this policy had been pursued down to the present time. On several occasions they had adopted the policy of applying portions of these reserves to writing down such of the | securities as they thought advisable. They had during the last six years written down their securities by more than £5,000,000, and they ended the year 1913 | with investment reserve funds of £1,000,000 in the combined branches.

The question as to the best method of dealing with the depreciation was one to which the Board || had given much 2 careful consideration.

In view of the considerations stated, the Board considered it was not advisable to write down the values of the funds again this year, but | that all available profits should be carried to the Investment Reserve Funds. They were strengthened in coming to this conclusion by the fact that the Board of Trade

has suggested | that the market prices ruling on 31st December, 1913, might be taken as a criterion. A sum of £500,000 was accordingly added to the | Reserve Fund in the Ordinary Branch, bringing it to the total of £1,000,000, and the sum of £250,000 to the Reserve Fund in the || Industrial Branch, 3 bringing it to the total of £750,000. Their total Investment Reserve Funds thus stood at the substantial sum of £1,750,000, | and, in addition, a further reserve of £300,000 had been set aside in the Industrial Branch to meet certain indefinite liabilities caused through the passing of the | Courts (Emergency Powers) Act.

The Company had set aside this year the sum of no less than £1,050,000, or nearly £1,200,000, | if the increased amount carried forward was taken into account, to meet the altered conditions induced by the war. The accomplishment of these results must necessarily involve some sacrifice on || 4 the part of both shareholders and policy-holders, and some departure from the high standard of bonus distribution they had aimed to attain. The amount of bonus distributable under their | profit sharing scheme would be reduced from £600,000, the amount distributed last year, to £300,000.

The amount of divisible profit in the Industrial Branch | was £300,000 less than in the previous year, £200,000 had to be withheld from the policy-holders, £50,000 from the outdoor staff, | and £50,000 from the shareholders. This amount of £50,000 represented a reduction of 1s. in the shareholders' bonus and was equivalent to a reduction of 5 || per cent. per 5 £1 share.

58. LIGHT CAR TALK

I ALWAYS knew that motors were capricious, but nothing has ever beaten the humours of a car which I have been driving during the past week. Its engine is peculiarly | difficult to start, and has a habit of stopping as soon as the throttle is opened. As a consequence, on more occasions than one I have started the engine five | or six times before the back wheels ever got a move on.

To-day I lost my temper after one of these exhibitions, and left the gear lever in the bottom | gear notch when I again essayed to start the engine. Of course, it started at the first pull, and with it the car! I executed what a football reporter would || describe as a magnificent sidestep, and let the car run up the road by itself. When I recovered my head I chased after it, and managed to get at the | switch. A salutary lesson, which I shall long remember.

My admiration for Yankee ingenuity is deepening. Trial runs usually evince a sickening monotony, so far as the demonstrator's strategy is | concerned. Variations are generally ascribable to the car, but a certain American showed me something really new this week. His enthusiasm seemed so genuine that my gentle heart repressed many | scathing criticisms from passing my lips, and when he pressed me to find a fault I mildly remarked that the steering seemed a trifle light. The light of battle gleamed || in his eye. 2
"Wait a minute," quoth he, peering anxiously ahead.

At last we arrived at a place where two roads met, and an extravagant road authority had left a | generous triangle of turf with a direction post in the centre. He got the car on the base of the triangle and ordered me overboard. Then he locked the steering | hard over, so that the car's circular course would utilise the three sides of the triangle as rough tangents. Starting the car on bottom gear, he dismounted, and left it | careering gay and empty in a bewildering succession of circles round and round the triangle of knobbly turf, whilst he stared challengingly at me, with his thumbs in his vest || armholes. 3
A passing car driver pulled up in sheer amazement at the crazy spectacle. He thought our ignition switch must have shorted in a permanently "on" position, and that we were waiting for the petrol tank to empty and stop the car.

Some years have elapsed since I fitted a set of discs to my wheels, and I am glad | to notice that prices have dropped in the interval. I am doing an unusual amount of winter driving, and untarnishable metalwork with unvarnished coachwork obviously clamoured for more cleanable wheels. |

My set of discs cost £4 7s. 6d., plus the labour required for altering the spare wheel bracket from a strapped fork to a dummy hub.

The sole weakness of discs, as applied to the light car, arises from the fact that most wheels in this class are of the Sankey steel bolt-on type. The nuts must inevitably be covered by the outer disc, and if one of them should work loose the owner does not notice it unless he periodically removes his discs as a precaution. 4

I have only encountered one or two cases of Sankey wheels working at all loose, and in each case the slight slackness perceptible after a few hundred miles was due to too thin a spring washer being fitted between the nut and the hub plate. The washer was thus practically uncompressed, and its intended locking effect was nullified. When thicker washers were substituted, and the nuts really tightened with the assistance of a mallet, they all remained motionless for thousands of miles.—*The Autocar*. 5

59. MEETING OF AN AMERICAN BANKING COMPANY

LADIES and gentlemen, I have the pleasure to move the resolution—"That the report and balance sheet as distributed be adopted, and that a final dividend at the rate of 4s. per share, less income tax, be, and is, hereby declared, payable on 27th instant." When we last met I was able to inform you that our Belgian colleagues were safe and well, and I am happy to be able to repeat that statement to-day, although Mr. Edward Bunge has remained in Antwerp practically the whole time since we had the pleasure of seeing him with us at our last meeting. As regards our staff, I regret to tell you that the English members of our Hamburg staff have been interned by the German Government, and we have done all we can to mitigate the inconvenience under which they are suffering by supplementing the supplies of necessities and comforts of life as far as is permissible. The total

number of our staff who have now joined his Majesty's Forces is 120, of whom about one-half came | from South America for that purpose.

The financial arrangements which had been made by the English Government with so much efficacy a year ago have since been supplemented from time | to time, as became needful, in order to meet the changing circumstances, and I am sure you will all have regarded with admiration their effectiveness. So far as they have || affected trade they have been ample, and in respect of the Argentine have resulted in our receiving from that country all the foodstuffs that we required at prices which, while | naturally higher than former values, have yet represented by no means so great an increase as might otherwise have been expected. In regard to the financial arrangements, I should like | to refer especially to two points. Firstly, the issue of the War Loans, so enthusiastically received by the public and in which I may mention we have taken altogether | £200,400—an operation which, with all confidence, we submit to you for your approval. Secondly, the Loan recently arranged in New York for the purpose of || adjusting the American exchange, which has already had a marked effect.

The war has brought about many changes in business methods, and in particular caused important developments in the trade | between the United States and the South American countries, resulting in an extension of direct financial operations between the two parts of the Western Continent, in which we have, by | means of our New York office, the opportunity to take our part, and we are closely watching the trend of events with a view to securing our proportionate participation in | that direction.

A year ago I was able to indicate to you that there were good prospects for the crops in the Argentine. This outlook has become an accomplished fact, || and I may tell you that the export of wheat during the year has been 2,500,000 tons, as compared with 900,000 tons in | the previous year, and there is available for export 5,000,000 tons of maize—of which only

3,000,000 tons up to now have been shipped—as against total shipments of 1,800,000 tons for the former year. It is not only in the quantity that the Republic has benefited, but in the price, which has been considerably higher. Wool has been shipped in about the equal quantity of last year, but here, again, the value has been favourably affected to the extent of probably 50 per cent. ||—*The Times*.

5

60. DIRECT CURRENT MOTORS

As regards brush gear there is not much choice. The type in which the brush slides in a box, and is held down by an adjustable spring, is practically universal in all up-to-date machines. A good brush holder should be short, so as to take up as little of the circumference of the commutator as possible. It should be a casting, and not made up of flimsy stampings, should be capable of using up nearly all the brush, and have as few parts as possible. Those who handle motors will not need reminding that the brush gear often gives as much trouble as all the rest of the motor.

The next point is the bearings. For small and medium size machines white metal is very widely used, although hard brass is to be preferred. There is not much to choose with regard to length of life, but if regular or skilled attention is not available, brass is the better. Once a white metal bearing gets heated up, it is almost impossible to save it, apart from the chance of damage to the windings. Bearings should be arranged so that they can be moved from either side of the end plate, or at least from the inside. Although this may seem a small point, there is a reason. Bearings sometimes seize, and when they do so, it is an advantage to be able to take off the end-plate, leaving the bearing on the shaft. It can then be loosened by tapping, or expanded by heat and drawn off.

The oil well should be large and painted inside to get rid of any foundry sand that may have been left in. The oil well should have a cover that cannot be taken off, and lost or left

dangling on a piece of chain. Some firms go to needless trouble and expense to fit an elaborate oil gauge, with overflow and drain pipe. This is unnecessary. It introduces several joints which are liable to leak, and sometimes in a belt-driven machine, the belt runs in and knocks the whole contrivance round and empties the oil well. The simplest and most effective device is a short piece of tubing screwed through the bottom of the oil well to the correct level. This acts as an overflow, the excess oil dropping clear of the motor, and the removal of the tube enables the oil well to be drained and washed out. If it is really desired to see the level of the oil, a short elbow can be screwed into the side of the oil well instead, and cut off to the correct level. It should have a check nut to keep it upright. A point, often overlooked by the makers, is the possibility of the oil ring getting out of the slot and causing a hot bearing. Means should be taken to prevent this, either by rounding off the edges of the slot, putting a clip across the slot, or having a tongue on the inside of the oil well cover to keep the ring in position. A lot of trouble has been caused by neglecting this simple precaution.

An important point concerning the shaft at the driving end is that the portion taken up by the pulley or pinion should be less in diameter than the part in the bearing. There are two good reasons for this. 1st—Should the bearing portion get scored or damaged from any reason, it can be turned down, and the bearing re-lined to suit, without affecting the remainder. 2nd—If the shaft is of the same diameter throughout, the pulley or pinion may creep along it, and rub against the outside of the oil well, and cause damage.—*Engineering Gazette*.

61. MEETING OF A RAILWAY COMPANY

COMING now to the separate departments of our business, I have first to deal with the most important section, that of the railway. I cannot do better than quote verbatim from the opening chapter of the manager's report to the Board.

It is as follows : " Due to the events in the world, the results on our railway have been quite | abnormal. Add to this the very rainy, stormy, and long winter we have had in Chile, and one will understand how traffic in general must have suffered. During the months | of May, June and July there were in our district fifty-eight rainy days, with a total rainfall of 67 in. After this very wet and stormy season came the European || conflagration, with its disastrous effects all over | the world. In Chile the crisis was from the beginning a complete one ; there was no trade on the sea, on account of | the nitrate and copper exportation being stopped from one day to the other, and, consequently, no movement in the ports, no bunkerings nor transactions." Suffice it to say that the | reduction in gross traffics, taking this side of the question first, has taken place entirely in the last six months of the year. The diminutions cannot be attributed to anything | but the abnormal conditions mentioned by the manager, in the words I have given you. One great influence on the decrease of goods traffic was the small output from the || Rabal mines. We only carried for that company 2 120,000 tons, whereas we have previously carried nearly 200,000 tons, and I may say that we | know they have been equipping their mines with most expensive machinery, and are almost in the condition to produce 350,000 tons per annum. With an improvement | in the coal trade in Chile we shall hope that they will be able to sell this output of coal, and we shall have more traffic coming from it. It | provides a factor for hope of greatly increased traffic on our railway in the future. Of our own coal, unfortunately, we were only able to sell and carry 123,000 || tons, as against 183,000 tons 3 in the previous year. Taking all these matters into consideration, you will readily understand why the reduction in traffic | which we feel sure is only temporary, has taken place. Turning to the question of expenditure, in this I am pleased to report a very favourable reduction of £6,000. | The outlay for expenditure in 1913 was £60,000, and in 1914 £54,000.

Dealing, secondly, with mines, it has been unfortunate that

on account principally, of the absolute impossibility of selling coal in Chile during the last six months of the year, I have to report a decrease in sales to the extent of || 60,000 4 tons in the year. There was a reduction in deliveries to the State Railways of 17,000 tons, but this is not surprising since, on account of the | entire dislocation of the State Railways during the last six months of the year, they hardly required to be supplied with any coal. The greatest falling off has been in | supplies to steamers for bunkering purposes. This amounted to 33,000 tons. The figures are that we supplied 47,000 tons to the steamers in 1913, while in 1914 | we supplied only 14,000 tons. The difficulties here have been, I am very pleased to say, effectively met by the general manager and the engineers of the coal mines. || —The 5 *Railway News*.

62. OUR TRADE IN GEMS AND PRECIOUS STONES

LONDON and Birmingham must be counted among the great marts for precious stones, the premier position occupied by South Africa as a diamond-producing region having brought about something like | a revolution in this country's gem trade. No doubt Amsterdam stands first as a diamond-cutting centre; then came Antwerp; and now London holds the second place, with probably Birmingham | and Paris bracketed for third. Certainly, at the present day, some of the cleverest diamond cutters and mounters are to be found in England, quite large clusters of firms being | established in Soho, to the west of Tottenham Court Road, a few in Clerkenwell and in the "Jewellers' Quarter" of Birmingham. Hatton Garden is the chief centre of the diamond || mart, though big dealers | are to be found outside that charmed area.

For practical purposes, when we talk of diamonds in the trade we refer to the South African stones. | The predominance of these stones is overwhelming.

Of the old Orient diamonds, those glorious blue-white stones

of dazzling sparkle, of proverbial hardness, we see little now. From India came | most of the historic diamonds in the collections, but the supply is apparently almost exhausted, the uncut stones exported being few, and only a small quantity coming west mounted in | native jewellery.

Of the hard, blue-white, rarely flawed, though smallish Brazilian diamonds the supply is still good, though nothing like what it was prior to the first half of || the last century. 2 A few colourless fine-tered stones of remarkable hardness reach us from Borneo and always fetch high prices. All too rare amidst our wealth of stones are | the rather small but excellent Australian diamonds, derived mostly from New South Wales, Victoria and Queensland, less often from Tasmania. Being the hardest of all diamonds, which can only be | cut and polished by their own dust, they are naturally costly; this, however, is also fully justified by their purity of colour, absence of flaws and exceptional brilliance.

Occasionally Rhodesian | diamonds are found among the South Africans; they are small and of no particular account. In the country lately known as German South-West Africa, now happily incorporated by the || Union Government, 3 yellowish-tinted stones of medium hardness and size are found, and though these are not likely to win favour for jewellery, they will be useful for industrial purposes. |

Huge as is the output of South African diamonds, and high though the percentage of big stones be, it is to be noted that flawless blue-white "Firsts" are comparatively | rare. So any real slump in the best class of stones is quite unlikely. The miners' classification of Blue White, First Cape, Second Cape, First Byewater, Second Byewater, Off Colour, | Light Yellow, Yellow, is changed in London to Blue White, White, Silvery Cape, Fine Byewater (of yellowish tinge), Byewater, Fine Light Brown, Light Brown, Dark Brown. Prices in 4 Blue Whites || for Mêlées (stones of mixed sizes of under quarter of a carat each) range from £10 to £15 per carat, and for stones of five carats upwards, from | £60 per carat and more. For Byewaters the prices range from £5 to £25 per carat.

The yellow "Off Colour" tinge naturally detracts from value, and the deeper the yellow, the less the stones are worth, until the "Browns" are reached and set aside for industrial purposes. But judiciously cut and set "Byewater," and even "Fine Light Browns," find their way into medium-priced jewellery. When we come to coloured diamonds, other rules prevail. A few really good blues come on the market and always sell well. ||—*Kelly's Monthly Trade Review.*

5

63. ORAL COMPOSITION

WHEN should oral composition be begun? is a question that is not infrequently asked. For my part, I have no doubt whatever that it should be begun long before school or even kindergarten is thought of. It should start at the mother's knee in the form of song and nursery rhyme, which in turn should develop into regular story-telling by mother or nurse. At first assuming the form of mere verbal repetition by the child of nursery quips and jingles, it should, as the story-telling is gradually introduced, pass insensibly into the reproductive stage, in which the child not merely repeats, but alters, modifies, and even invents. No more accursed doctrine was ever propounded than that of little children being seen and not heard. Everyone who knows the A B C of childhood knows that the average child has to talk itself into correct speech. Only incessant practice enables it ultimately to express itself correctly and grammatically. To attempt to prevent a child talking is as deadly a sin as to try to prevent him growing. It is, in fact, part of his growth. The average child wants to talk. It is the average parent who has not the patience to listen. The story-telling instinct seems natural to most children. When words fail, they fall back on the more primitive and fundamental language of gesture. I was never more surprised than when a child of mine at the age of two, while repeating a story of a little boy who tried to hide from the inconvenient attentions of a bad lion, of his own accord in the course of the tale took cover behind sundry

2

tables and chairs, in order to illustrate what happened in the story. I realised in a flash, as I never had before, how fundamental a |thing acting is, and how much more advantage we might derive from it in school than we generally do.

Gesture is, in fact, but one degree removed from reality while |speech is action two degrees removed. Gesture is, so to say, the coin, and speech the paper money of action. Words are from one point of view the promissory notes || of actions 3 which we may or may not perform. If the theory be right that our lives are mainly shaped for action, then gestures, language, and acting are doubly justified. |

That is, however, by the way. Story-telling possesses the twofold advantage of conveying much informal instruction in ideas and also of increasing the child's vocabulary. Many people discourage questions from |a child during the telling of the story. But if the audience be an audience of one, or even if there be only one or two other listeners, I think |such discouragement is a mistake. The child who questions is filling up thereby the gaps in his own knowledge, gaps which otherwise we might never discover. And the aim in || view 4 is not our telling the story as perfectly as possible, but the amount that he can assimilate. But, on the other hand, questions for the mere sake of questioning |should be discouraged. They rather resemble those questions in reported speech in Latin, which not being asked for information are described as "oratorical." Questions, again, on our part are not |essential, and if too freely applied rend asunder the flimsy fabric of notions that the child has formed of the story. For children grasp this synthetically through their feelings and |emotions quite as much as through their intelligence. They absorb them as wholes, not as mosaics. We all know the child who said it understood the poem until it was || explained to it, i.e., 5 analysed and taken to pieces, until, in fact, the poem as a whole had disappeared.—*School World*.

SECTION VI

130 WORDS PER MINUTE

64. SPRING IN MID-WINTER

THE white heads of snowdrops have already shown themselves, as yet unfolded, upon a grass bank in London. This is earlier than usual ; we do not expect a hint of spring before the | New Year. Until to-day flowers for us are strays of autumn, even if they are primroses or violets, and untimely strays. But the snowdrop, whenever it appears, has the promise of spring in | it ; for it is a bulb that flowers once and for all, and then goes to sleep and awakes again in due season. So it is with the aconites, though they are | not bulbs and though they, too, try to make a spring for us in mid-winter. We begin to look for them in the garden now, breaking through the soil eagerly and showing || blossom a few days after the first sign of leafage. |

In the woods, where it is sheltered from the north winds, the honeysuckle has already thrown out fresh leaves, so fresh and green | that we cannot think of them as strays of autumn ; and soon the new growth of the dog's mercury will be thrusting up as eagerly as the aconites. It seems to know that | it is a dull plant, which would never be noticed if it came with the mass of spring leafage and flowers ; so it gains our gratitude by coming in January to tell | us of the turn of the year, and that every warm day now belongs to spring, not to autumn.

No one can explain why these early plants and flowers are early, any || more than why certain plants have chosen to live 2 among the snows of the Alps. They get certain advantages, no doubt ; but that does not tell us why they prefer these advantages, why | they have specialised and adapted themselves in this manner. We can only be grateful for the infinite

diversity of nature which gives us these beautiful surprises, and in our temperate climate will never | make winter utterly wintry, but invades it at both ends with autumn and spring. And it is a surprise to us every year, because in summer we always think of winter as | utterly wintry and of January as a frost-bitten flowerless month. So we welcome the snowdrops and the aconites as if they came to us before their time as a special favour.

It || is only the hardened gardener who knows when to expect them and with them other winter flowers which he grows as winter flowers. Chief of these is the *stylosa*, which often begins to | flower in November and goes on till March, and yet looks, with its delicate petals and rich colour as if it belonged to the height of summer. Then there is the winter heliotrope | which flowers at Christmas and is sweet-scented and a terrible weed. And there is the minute daffodil often appearing in January. 3

Perhaps all of these will in time become as familiar | in our gardens as the old Christmas rose, a flower of winter which yet seems always to be discontented with its flowering time as if it had been waked up unseasonably, like || a night-porter. For this reason we are not so grateful to it as we should be ; for it does not remind us of spring any more than a night-porter does of morning. | But the early bulbs make a spring for us and rejoice in it, whatever the weather may be. They protest against our sharp division of the seasons, against our sense that the spring | is ever so far away in January, and they make us feel that it is not so far away as we thought. If the sun shines on them, it seems at once | to be a spring sun and has in it a warmth and richness it would never have in a flowerless garden. They are like the song of birds that rises sometimes with a || winter sunrise.—*The Times*. 4 5

65. ELECTRIC TRACTION

If the internal combustion engine were brought into general use for railway purposes, it is doubtful whether the oil fields

would be able to keep pace with the greatly increased demands such a course would entail. The extensive demands for the many classes of oil engines now in use have certainly been met without difficulty, but this cannot be taken as a fair criterion, for if the principle were extended to railway work, the demands from all other sources combined would dwindle into comparative insignificance. The fact of our railway companies being absolutely dependent upon foreign countries for their supplies of fuel would also tend to raise complications, and, all things considered, it cannot be said that any great likelihood exists of the internal combustion engine coming into general use. ||

We now come to the question of electric traction as applied to the haulage of freight traffic, and it is here that the best prospect of carrying out economies is afforded. In the first place, the limitations imposed by gauge considerations are practically non-existent where electricity is concerned, hence more powerful locomotives could be introduced capable of hauling heavier loads at increased rates of speed. This is amply vouched for by American practice, where the introduction of electric traction has made it possible to double the average daily mileage run by freight locomotives. Another very great consideration is that electric locomotives waste no energy when standing idle, whilst in the case of stationary steam locomotives there is a fuel consumption waste of about 33 per cent. Greatly improved results are also met with in maintenance and repairs, and not more than 10 per cent. of the total electric locomotive stock need be tied up in the repair shops, as against 30 per cent. when steam locomotives are employed. In regard to the questions of pooling or double-crew working, also, preference must be shown to electric locomotives, as owing to the fact that all the engines are worked on exactly the same principles, the drivers can be changed about at will, whereas with steam locomotives this practice cannot be resorted to without involving principles of a most undesirable character. For emergency requirements, also, the electric locomotive can be turned out at a moment's notice

without waiting for steam to be got up, etc., while the fact that the engines can be || operated from either end and do not require to take water supplies en route must inevitably tend to increase their efficiency still further. 3

Apart from considerations of initial cost enough has been said | in the foregoing remarks to show that electric traction possesses many advantages over steam ; but as initial cost is the one great stumbling-block to its introduction, this statement does not carry us | very far. At the present time, however, experiments are being conducted with a self-contained electric locomotive in which the necessary power can be stored up by means of accumulators, and this, if | put into operation, would at once do away with the necessity of providing overhead trolley or third-rail systems of power transmission. If this type of locomotive can be so developed as || to 4 enable it when once charged to haul heavy trains for distances of, say, 100 miles, it would undoubtedly prove a very strong factor in railway transport work, and should pave | the way for a general introduction of electric traction at an early date. Even if it should prove unsuccessful, the present method of transmission might still be applied to those sections of the | line where traffic density is very high, but on branch lines with only a comparatively light traffic it is difficult to see how the large capital expenditure could be justified. In the | event of steam traction being wholly or partially retained, future developments may be looked for in the extension of superheating and feed-water heating principles to all classes of locomotive stock, and || in the careful and systematic 5 education of enginemen in the practical application of these principles.—*The Railway News*.

66. IRRIGATION OF INDIA

THE question then arises whether the canal shall cross the torrent by an aqueduct, or "syphon" under it, or let its waters mingle with the torrent, using regulating dams on either side. This | question is decided by considering

whether the level of the canal is above that of the torrent, when an aqueduct is best, or below it, when a syphon is used, or on the same level, so that regulating dams are the simplest device. But to return to the problem of the headworks, geographical conditions are the main factors in determining their site. The first necessities are a firm soil, and a good command of the land, since irrigation is done by gravity as far as possible. Other things being equal, it is best to choose the highest site and then dispose of any surplus height by a vertical drop into masonry cisterns, or by rapids if boulders are available. Proximity to the land which is to be irrigated is also a desideratum, as conveying the water a long distance involves a great loss through percolation and evaporation. With regard to the river itself, it is best to choose a site with as straight a channel upstream and for as long a distance as possible, so that the velocity of the stream against the weir should be fairly uniform. This is partly to avoid uneven pressure against the weir, but still more to guard against the deposits of silt through eddies. The silt difficulty is one of the main questions to be dealt with, second only in importance to the control of the river, which is based on a knowledge of its average flow at different seasons, showing the water available for cultivation and the maximum flood on record, which affects the strength and capacity of the engineering works. The first question to be decided is whether the silt is good for the land and to be turned aside on to it, or whether it is injurious and to be carried down stream, the more usual alternative. To dispose of silt down stream it is desirable to avoid irregular accumulations above the weir by having a straight channel upstream and the weir at right angles to the stream. As narrow a weir as possible will give more velocity for carrying off the silt, and if a narrow site has great drawbacks, it is always possible to restrict the width of another site by training works. Nothing has influenced improvements in weirs more than the silt question. In the case of the dam at Hardwar, where the Upper Ganges canal is taken off, there is a large primitive weir composed of cribs

filled with boulders, which is destroyed annually by the floods, but a permanent | weir is now under construction. With the construction of permanent weirs the silt question becomes important. The original permanent weirs of India were immovable, and built of solid masonry, and water could | only pass over the top of the weir. The difficulty of obstructing the river by such a barrier was that during the floods, especially in the later stages, there were great eddies || in front of the weir, resulting in uneven deposits of silt. Possibly after the flood the low water channel might be on the other side of the river away from the canal head, | or even if there was no such immediate necessity for clearing away shoals, it would have to be done before the next flood to prevent serious damage. The first invention for carrying | off silt was scouring sluices at the end of the weir above which the canal head was situated and at the level of the deepest part of the river. This method of | disposing of silt has been found only fairly efficient, also repairs are least where resistance to the floods is at a minimum. The "bar-
rage" is better. It consists of piers firmly planted || in the floor, with vertical grooves in which shutters can be raised or lowered.—*The Geographical Teacher.*

67. JUDGMENT ON A RAILWAY DISPUTE

THIS is an appeal from the judgment of Mr. Justice Warrington whereby he declared that the defendants were liable to put a bridge in the pleadings mentioned into such a condition that it | would be safe for the passage of traffic upon and / or to be expected upon the highway coming up to the bridge at either end thereof. The Great Northern Railway Company, the defendants, | appeal, and object to the form of that declaration which they say exceeds the liability under which they stand, that is a declaration that they are liable to put a bridge into | a certain condition, and the contention of the railway company is that they are liable to maintain the bridge to the extent and in the manner I have indicated, not that

they || are bound to strengthen and improve a bridge so that it shall bear certain traffic. |

Now the bridge in question is a bridge at Crouch End Hill. It appears that it is a | bridge carrying the road over a railway, part of the Great Northern system at Crouch End Hill. The railway was constructed under an Act of 1862 by a separate | Company which was subsequently absorbed and the railway taken over by the Great Northern Company, and no question arises as to the liability of the Great Northern Railway Company with regard to it. | They are in the same position as the original company was.

Now the bridge was constructed under the powers of the statute that enabled the company to make and maintain a railway || according to the plans and so on which were deposited. The bridge in question is only shown in a diagrammatic form upon the plans, but it is the bridge at Crouch End Hill. | The railway was made, and shortly before it was opened for traffic, the statutory notice was given and the railway was inspected by the Board of Trade, and we have the report of | Colonel Hutchinson made upon the inspection in which he refers to all the bridges upon the line. He mentions that there are thirty-six bridges, and then he says that the abutments | are all composed of brick or brick and stone, in five cases the girders are of cast iron, and this bridge is one of those having cast iron girders; then he says || all the bridges are substantially built; and in due course leave was given to open the railway for traffic. 2

Now it is conceded for the purpose of this case, and there is no | dispute between the parties, that the bridge was properly and substantially built in the first instance, that is before the railway was opened for traffic in 1867. It appears that | after that date, at some time, water mains of the New River Company have been carried over the bridge, and in that manner the dead weight upon the bridge had been increased. | One main which was there has been removed, and a much heavier and a much larger main substituted, and additional mains have been laid over the bridge, and it also appears that || 3

the thickness of the substance of the roadway over the bridge has been increased, and in that manner the dead weight which the bridge was to carry has been increased since the construction of the bridge. The Railway Company said that they are liable to maintain the bridge, in the condition in which it was at the completion of the line, and they also concede that they must execute such works as may be necessary to compensate for the additional dead weight placed upon the bridge in the manner I have indicated; but they dispute they are liable beyond that. On the other hand, the Attorney-General and the Relators contend that the Railway Company are liable so to improve and strengthen the bridge as that it may be sufficient to carry all the traffic that may be reasonably expected to come upon it at the present day.—*The Railway News.* 5

68. OVERHAULING LOCOMOTIVES AND MOTOR CARS

In the inquiry into a recent railway accident it was mentioned in the evidence that the average main line railway locomotive ran from 60,000 to 80,000 miles before requiring to be overhauled, and, as evidence that the engine which caused the accident was not suffering from any serious neglect, it was stated that at the time of the accident it had only run 41,000 miles since its previous overhaul. The fact passed unnoticed at the time, as it was no news to railway men, and possibly it did not interest the general public. It was a coincidence that just about the same time we had published particulars of a new British car which was designed to run 50,000 miles between overhauls: in the interval merely requiring replenishing with oil, fuel, and water, and periodic cleaning of cylinders and pistons and grinding in of the valves. Not a few who read of this ambition on the part of the maker of the car laughed at it as being altogether visionary. It is perfectly true that up to the present time few cars have come near it, but that it is unreasonable that this should be the aim of a builder of a reliable car we do not admit. It is true

that many cars are on the road to-day which have run very much more | than 50,000 miles. There are not a few now which have gone for above 100,000 miles ; but it is not a question of total distance before being worn out || that we are discussing, but merely the mileage which can be secured before the car is in need of overhaul. 2

5 The railway definition of an overhaul is very thorough, but it is not | rebuilding. That only comes after a number of overhauls have been made, and may result, and in many cases has resulted, in almost a new engine. But the overhaul of a locomotive is | very much the same as the overhaul of a car. It is begun, continued, and ended in the same way. That is to say, first of all the machine is taken to | pieces and all the parts properly cleaned and examined. Any parts which show signs of wear are either renewed or adjusted, and if the work be properly done the machine at the || completion of the overhaul is practically as good as ever it was. In the meantime both the railway engine and the motor car are supposed to have received reasonable periodic attention in the | way of lubrication and careful watching and examination, so that if any small defects arise they will be detected and put right before they assume serious dimensions. It may be interesting to add | that the signs of requiring an overhaul are practically the same on all automobiles, whether they run on road or rails ; that is to say, power begins to fail and working parts | become loose and rattly ; and the man who handles them detects many subtle differences between the thoroughly tuned-up machine and the one which had gradually begun to show the signs of an || overhaul being due. 3

1 On the whole, the railway engine has a better time than the average car so far as attention is concerned : it may not be very delicate or very minute, but | it is very regular, and what one may call abreast of the robustness of the machine. A carefully attended car is quite as well looked after, but the average car certainly is not. | The railway engine suffers less from grit and mud than the motor car, but there is not a very great deal in this, as most of the grit it encounters 4

is of distinctly an abrading nature so far as wear and tear of the working parts are concerned. Its advantage is really in wet weather rather than in dry, as it does not have to run like a mortar mixer, with a large proportion of its working parts in what is little better than a mud bath.--*The Autocar.* 5

69. AFTER HARVEST

THE end of the middle week of this month finished harvest. An odd field of grain on a bleak hillside may still be out in stock. This, however, means little, and in a general sense may be made the subject of the rustic jest, which in the Northern counties attaches itself to the last sheaf tossed on to the cart from the last field to be cleared. Good weather for the past fortnight helped all sorts of work with grain crops. This made conditions comfortable for those taking part in stacking or threshing, and benefited the quality of both grain and straw. Some of the days recently were more like what one expects in June than those which fell out in the early month this year. Weather cannot be adverse always. Some folks look for summer when it should come, and if it comes not, then they despair, and say it will not come for that season. The theory does not always hold: oftener the reverse happens. At least one would expect that it should, for there is always a levelling up tendency in the natural order of things. Like everything else in life, it is well there should be a variety in the nature of the seasons. If every month in the year had regularly the same features of drought and wet, of heat and cold, and of fixed combinations from these, weather predictions would be farcical, and reference to barometers useless. In our country we think in the stable order of experience that May should be dry and warm, June sunny and showery, July gappy and uncertain, August at its opening and until near its close mixed with thundery flood-bursts and scorching sunglares in gleam times, September cool and breezy, and October chill and calm. This order does not always follow. Winter, as in 2

5 this season, sometimes clings on, and disputes the advance of summer. Yet, by this year's teaching, if summer is checked in | coming, it takes its toll of days none the less, and spreads its glow well into the autumn. It is then the disappointed ones feel in a way recompensed, and the wish is | heard expressed that such weather may last, if only because it will make the winter seem so short. The farmer has no taste for such whims, as he regards them; he has || 3 to take the weather as it comes; even if he or his class had the ordering of it, there would be dispute and plenty, on the lines it should take. The purely tillage | man—ar t his wish would vary according as his lines are cast in a Northern or a Southern county—might ask for this or that kind of weather in a certain month, and | another farmer, with the raising of live stock solely in view, ask for something quite opposite. The Northern tillage farmer could be understood specifying for a mixed May to help the turnip brairds and | a dripping June to lengthen the flax stalks and strengthen the first crop hay against cutting time. He would like a warm, dry July, and, though he might not object to the || usual 4 showers in August, he would not mind if no further rain was forthcoming till the harvest was in-gathered. This programme would not, however, suit the grazier, with whom grass, and more grass, | and always grass with feeding quality in it, is the main thing, and who only compares one season with another on the basis of the quickness with which cattle that roam his fields | thicken for the butcher. Truly, the weather which would suit every type of farmer would be difficult to parcel out. Even on tillage farms the rain that would be helpful to crops | on one class of soil might be a cause of injury and loss to the same crops on different situations. This season there has been much to complain of in respect to || adverse 5 weather.—*The Farmer's Gazette.*

70. REINFORCED CONCRETE

2 THE table of working stresses, as now given for concrete, has been considerably revised, and due increase in the stresses

allowed for richer mixtures has been made and the table may now be considered a fair one. Several of the remaining clauses under the heading of "Working Stresses" have been revised, and, generally speaking, the revision has been to make them more lenient. The table dealing with the grip or adhesion length given in the previous regulations has been omitted and a general clause introduced which ensures the length being sufficient to keep the stresses within the limits allowed; and other slight modifications have been made in the case of bars having a mechanical bond.

Some important alterations have been made in the clauses relating to compressive reinforcement in beams and shear reinforcement, and these will be welcomed by all designers; while the effective depth of slabs required as the minimum has been reduced from 4 in. to 3 in. The rules relating to the breadth of slab that may be taken as forming the flange of a tee beam have been varied to allow more latitude to the designer, and a clause has been introduced which deals with ell beams; while certain alternative formulae have been given and additional clauses added, the chief of the latter having reference to the case of a beam supported at its end by a transverse beam. In the section devoted to struts many alterations have been made, some of which are very important, and generally the conditions are not so stringent as before. As an example it may be said that in the previous rules three methods were given for forming the joints in the vertical reinforcement, but this has now been revised and the one clause dealing with the method states that an overlap shall be provided at least equal to twenty-four times the diameter of the upper bar. In the previous regulations it stated that in cases where there is a change in section the vertical bars shall have an overlap at least equal to forty times the least diameter of the thicker bar, and it will be evident that this is an important change. This is only given as one example, and it is impossible to deal here with all the modifications that have been made in this section, but it is sufficient to say that the modifications are numerous. In the section

devoted to the construction of walls the only alterations made apply to the use of hollow concrete blocks, and here some changes have been made.

The sections on foundations, protection, cement, sand and coarse material remain practically unaltered, but the table dealing with the proportions and ultimate resistance of concrete has been altered in form, and this is an improvement. The notes on steel remain unchanged, and practically the only alteration under the heading of testing is that dealing with deflection, and this shall not exceed $\frac{1}{800}$ of the span, when the span is twenty times the effective depth, and the beam or slab is freely supported and uniformly loaded and subject to the permissible working stresses. The only alteration in the section devoted to centring is the introduction of the term "Formwork," which is given as the alternative to the term "centring"; and in the last section, which deals with the workmanship, one or two variations have been made, and these deal with concrete affected by frost, and wood embedded in concrete. 4

The total number of clauses in the regulations as now given is 188, whereas in the second set, which have been superseded or rescinded by the Council, the total number was 164.

Generally speaking, these last regulations are a great improvement on the previous ones, as, while they contain all the essential conditions to ensure satisfactory work, they are not so stringent, and it is quite unfair to impose unnecessarily hard rules because the material has not been in general use for a great number of years.—*The Builder*. 5

71. THE MIDLAND INDUSTRIES

IN the matter of small metal goods Birmingham and its neighbourhood more than maintain their old position of premiership. The reputation and sale of these goods goes up by leaps and bounds. Among the most interesting

of this extremely miscellaneous assortment of manufactures are pins, needles, pens, and all relating thereto.

Truly of the making of pins and needles there is no end, and, moreover, modifications and novelties are being introduced from day to day as the experts study the conditions of domestic and industrial life. It was from the Midland District that the easily-threaded needle, with a downward slit at the base of the eye was introduced. Another and more recent introduction is the patent "Scientific" needle, which is so formed that the eye when threaded only equals the size of the body of the needle, not being flattened out; consequently it works more smoothly and rapidly. A simple but excellent device for ordinary sewing needles was to gild the eye-piece, which certainly facilitates the operation of threading. Needles are made in a great many sizes, and of varying proportions between the length and diameter of barrels. Then there are endless types for special trades, extending to the leather workers' and bootmakers' awls and drivers, sailmakers' needles, straight and curved packing-needles, either with symmetrical or lance-shaped pointed ends. Next to these come the needles for ordinary and trade sewing-machines, bootmaking machines, and so on. A comparatively new branch is the making of eyeless needles, really diminutive styles, for phonograph and kindred recording machines. Huge quantities of these are exported to the musical machine makers abroad. In spite of the large varieties kept in stock, it is not uncommon for needle-makers to be approached to design some special form of needle, likely to overcome difficulties met with when dealing with certain materials. With the Midland manufacturers this is a comparatively easy matter, as they have their trained experts at hand and such a splendid array of costly machine tools.

Great as is the variety of needles made, there is even a more striking diversity in the patterns and sizes of pins. These are made of an extraordinary diversity of metals—the most common being iron, steel, alloys of copper, silver and gold. They can be had with round, flattened or no heads; with heads

of metal, glass, porcelain, || celluloid, paste "gems" and imitation pearls, or of real precious stones mounted in silver or gold; for they range from those required in industrial work to those for toilet purposes and fancy drapers' | and milliners' goods. The useful safety, or "nursery" pin, has undergone many modifications, whether made for toilet purposes or for household use, the latter, for instance, as when combined with curtain rings. | 3

Hair-pins also receive minute attention. The first wavy modifications of the ordinary tong-shaped hair-pins has long since been surpassed by other devices, such as outward-spreading flattened ends, rounded and acute | shoulders, and bowed forms. They range from the tiniest models to gigantic instruments. A branch of increasing importance consists of hair-pins having ornamental tops, loops or buttons, in fancy decorated metals, glass, || paste or precious stones. Some of the hair-pins are also turned out in the precious metals, gold and silver. 4

In all these cases the boxing and carding is as diverse as the shapes, | sizes, and materials.

For something like over three hundred years Birmingham and Redditch have been producing a large percentage of the iron and steel fish-hooks used in every part of the world. | There are upwards of a dozen large establishments specialising in this way, and turning out hooks ranging in size from less than half an inch long to over a foot in length. | They are made with different forms of barbs and shanks to meet the varied kinds of fishing in rivers, lakes or seas, for sporting or industrial purposes. Some are of bright steel, || others of dark-brown alloys and of deep blue.—*Kelly's Monthly Trade Review*. 5

72. GERMANY'S WAR FINANCE

THEY had seen and discussed the steady accumulation of gold in Germany, but did not know that these precautionary measures were in anticipation of a struggle which was so soon to take place | and which was to shake the credit of all

nations. Referring to the situation from an economic and financial standpoint, he observed that on the 18th July last the Dresdner Bank caused a great commotion by selling its securities and by advising its clients to sell their securities. This was recognised as the first semi-official intimation of a probable European conflagration, and Berlin became apprehensive. |

War was declared between Austria and Servia on the 28th, people were seized with panic, and great runs took place on the Reichsbank for gold and on the joint stock banks of Germany || for gold or notes. The Reichsbank lost ten millions sterling of gold or thereabouts, and to prevent further loss a measure was passed prohibiting the bank from paying any more of its | notes in gold. To meet the difficulties of the other banks, the Reichsbank discounted, during August, about 200 millions sterling of bills. Of this amount 117 millions were drawn | out in notes, with which the banks were enabled to meet the runs. They next proceeded to establish war loan banks, war credit banks and war aid banks all over the country, under | the patronage of corporations, municipalities and private financiers, and to make use of the mortgage banks already established. The Reichsbank had the right to issue notes to any amount, provided it held || 2 as cover practically one-third in gold and two-thirds in bills of exchange. As the Reichsbank was to play an important part in war finance they were careful to keep down the issue | of their notes as much as possible, as they knew that criticism would be directed against them. They, therefore, proceeded to issue, and were continuing to issue, notes through the media of the | various war and credit banks. Government securities, other securities and produce were pledged with the war banks; advances to the extent of 75 per cent. being made on the first-named class of | security, and on the other classes to the extent of 45 per cent. These advances were made in war bank notes, which were legal tender and performed all the functions of money. || The mortgage banks were under 3 the control of chambers of commerce and municipalities,

and they made advances on the mortgages of properties by an issue of notes, which were also legal tender and performed all the functions of money. In this way the country was gradually being supplied with the currency required for carrying on the war, but, knowing that the eyes of the world would be fixed on their gold position, they were careful to maintain a difference between the Reichsbank note and the notes of the two other classes of banks. The Reichsbank note, although it was no longer payable in gold, was issued on the basis of gold and bills of exchange, while the notes of the war and credit banks had no relation whatever to gold, and were issued on the basis of securities and properties. The mobilisation of the German armies was financed by the notes of the Reichsbank for from four to six weeks, so that by the end of August, with the war and other demands, the total discounts and loans of the Reichsbank amounted to about 243 millions sterling, and the total notes issued to about 212 millions. By this time the pressure on the bank was becoming too great, the war loan was issued and a sum of about 223 millions, partly on bonds and partly on Treasury notes, was raised. By the end of the year the whole of the loan was paid up and the debt to the Reichsbank discharged.—*The Financial Times*.

73. MOTOR-AMBULANCES

A MOTOR-AMBULANCE costs rather more than it did a year ago. There are two causes for this—heightened prices in the market and also the fact that the pattern has undergone development. Consequently those who wish to give an ambulance are now asked for £450, and though the difference is small to the giver it is great in the additional ease which it gives to the wounded. While the standard type built to the War Office specification remains practically that decided upon at the end of September, 1914, as a result of the careful consultations between the ambulance department of the British Red Cross Society and the engineering staff of the Royal Automobile Club, a number of modifications, chiefly in the bodies.

of the cars, have been the results of later experience on which the new type of the British Red Cross Society has been evolved. These new cars have twin back wheels which are a great safeguard on bad roads. The first standard motor-ambulances, which we may now call the old type, have a rectangular frame covered by canvas curtains which can be rolled up at the sides. The stretchers are placed on the supports at the sides, and on projections from a central bar, so that when the ambulance is fully loaded a nurse or orderly cannot sit inside the car. The new type is wider and provides a gangway, as the illustration shows, between the stretchers. On the inside, too, curves take the place of right angles to facilitate cleaning. The frames for carrying the stretchers, two on each side, are adjustable and stable, and by an ingenious contrivance can be packed away on each side so as to afford seating accommodation for eight patients when there are no stretchers to be carried. The canvas awning painted in service green is fixed and the sides cannot be rolled up as in the early pattern. The interior is painted in leadless white; such windows as are necessary are of celluloid to minimise the risk of injury should they be broken, and an electric bulb in the roof takes the place of the former oil lamps. A speaking tube for communication between the driver and the attendant and a dressing box beneath the attendant's seat are further refinements of the new type. The improvements are so obvious to the lay mind that it is only right to mention that the older type had certain advantages. The additional width of the new car may be a difficulty in narrow or crowded thoroughfares, but it is a concession made to the increased comfort of the patients.

When a cheque for £450 "to provide one motor-ambulance" is received at Pall-mall, a series of negotiations is immediately engaged upon. The first of these is generally a polite inquiry to the donor as to whether an additional sum of, say, £200 can be provided for the maintenance of the car. We have already dwelt on the importance of this point. At the same time the society's engineers are consulted, the

type decided upon, and the order for the chassis is placed. The body is generally built in London in order that the society's representative may supervise the construction and check the details. As soon as both chassis and body are delivered the completed car is sent to be passed by the society's engineer. It is then taken to the depot at Balham, where it remains until it is ordered abroad. It is not likely to wait long. When the order comes the car is equipped with stretchers, rugs, pillows, first-aid outfit, lamps, and other necessities. It is then brought to St. James's Square and its driver receives his brassard and badge, his identity certificate and disc, his passport, and instructions with a letter of introduction to the transport officers.—*The Times*.

SECTION VII

140 WORDS PER MINUTE

74. ANNUAL MEETING OF A COMMERCIAL BANK

WHEN I had the pleasure of meeting you last year, I expressed the opinion that your company had a bright future before it, but I certainly did not contemplate then that the plans of your Board for its development would be temporarily frustrated by the outbreak of a calamitous European war on the gigantic scale of the present conflict, the effect of which is making itself felt even in the most remote corners of the world. The countries of South and Central America, dependent as they are on the financial assistance hitherto granted to them by the European markets, and especially by those of the belligerent countries, are feeling very acutely the abrupt disorganisation of the world's vast credit system, to which those countries owe a very large measure of their recent progress and development. It is, therefore, disappointing to me and to my colleagues to meet you to-day and have to state that under the present circumstances the progressive elaboration of the plans we had in view for the advancement of your company must of necessity suffer some delay. In the lesser States of the South American Continent it may be expected that there will be a more rapid recovery from the effects of the curtailment of financial facilities than, perhaps, in the case of their more highly developed sister republics, as the position of the former on the outbreak of the war may not have been quite so complex as that of the latter, and I would remind you that it is with these lesser States that our business is principally conducted. It is easy to see how these lesser States, with their somewhat deficient banking

arrangements, || are affected. The position of their traders 2
has been aggravated by the pressing claims of their creditors
on this side for a prompt settlement of all outstanding accounts,
by the withdrawal of credit facilities on | this side, to say
nothing of their inability to withdraw their deposits here and
in other European centres during the existence of the mora-
toria. It is not surprising that, to meet the difficulties thus
engendered, | the respective Governments of those countries
have extended to their business communities protection, as far
as it lies in their power, by themselves decreeing moratoria and
other prohibitions, which naturally make the remittance of
moneys | owing a very difficult and, in some countries, an
impossible matter.

However, the ending of the moratorium in this country is
a first step towards more normal conditions, and certainly
the situation is more promising || at present than it was. 3
Your company have every reason to congratulate themselves
on the manner in which so far a number of their debts abroad
have been liquidated and the success attending the efforts |
made to assure a prompt settlement of others. Still, the inflow
of capital so necessary to the development of Central and
South America has ceased, and it is very unlikely that it
will be renewed | for some time to come, at any rate as far
as Europe is concerned. Meanwhile, the producer in those
countries, finding his hitherto comparatively easily procured
finance curtailed and in many cases entirely withdrawn, is |
confronted with the problem of how to pay his labour bill,
failing which he must perforce abandon his crops. The
Governments in their turn, fully alive to the urgent necessity
of granting assistance to the || producer, or finding themselves 4
with much depleted treasuries, are occupying themselves, in
conjunction with the respective banking and mercantile
communities, in formulating schemes to meet their particular
cases, and I am glad to announce that the | representatives of
your company are taking an active part in such discussions and
are assisting, in so far as it lies in their power, all proposals
which may tend to ensure the gathering of the | growing crops

on which the welfare of the countries in which they are established so much depends.

Our intervention in certain negotiations connected with such matters has been made more valuable than it might otherwise have been by the recent visits of our representatives to our branches, have enabled us to take a wider perspective of the situation than would otherwise have been possible, and to ends which will materially benefit your company in the near future.—*The Financial Times*.

75. SIDECARS

THE subject of sidecars provides the student and the engineer with some difficult problems, and the suggestion of two passengers abreast is one which, if put into practice, may be severely criticised by the majority of sidecar experts. It is now some two years ago since the writer saw a sidecar with seating for two abreast, but is inclined to the belief that such cars will not find general favour for reasons which will be shown herein.

Undoubtedly, this outfit would be almost impossible to upset, presuming, of course (as would appear necessary), that a track substantially wider than usual is included. Compared with other methods of carrying more than two people altogether, *e.g.*, (a) on the carrier, (b) one passenger behind the other in the sidecar, the "two-abreast" principle is far and away the safest—especially in point of stability when turning to the left; and the passenger on the carrier method the trickiest for cornering at speed. On right-hand corners it is doubtful whether either has a preponderating advantage over the other.

What one has to contend with when cornering or when driving in a circle is centrifugal force, *i.e.*, the outward direction of the force exerted on a body in motion, travelling in a circular path, urging it farther from the axis of motion.

Having made this clear, the tendency to tip up is not difficult to comprehend. Nevertheless, there are other factors

to consider, which the writer endeavours to account for, viz., the centre of gravity and the amount of resistance by contact of the wheels of the motor-cycle with the road determining ability to sideslip when turning to the left, with the sidecar || wheel and road when cornering to the right. 2

The advantage of a low centre of gravity and very wide track as compared with weight high-placed and narrow track, is obvious by comparison of | two pyramids also; where A would probably slip, B would overturn.

The outfit wants to move bodily sideways or outwards, owing to the centrifugal force. It meets with the resistance of the contact or friction | of tyres and road.

The wider the track (given sufficient weight at sufficient distance from the motor-cycle) and the lower the weight is placed, the safer will the machine be, and were this the only | thing to consider we should be quite happy with our sidecars designed on the "two-abreast" lines. But there are still further considerations—steering, wind resistance, and strain on framework, hereafter discussed.

This leads us || to review the effect of cornering with the ordinary motor-cycle and sidecar, but with the extra passenger seated on the carrier. The results will depend in a great measure on the height of the centre | of gravity of the whole arrangement so ridden. It is not necessary to remind readers that this varies considerably; some machines are inclined to be top-heavy, and, added to this, the carrier is placed in | a very high position, but on others the bulk of the weight would be much lower. Those who have made experiments with "chassis-driving" on sidecars well know how easily this wheel then picks up. | Now if one gets the passenger on the carrier, and corners to the left sharply, the suggestion of the "extra passenger on the carrier" is at once shown to be wrong in point of stability. || The effect is not, of course, apparent when cornering to the right. The double weight on the motor-cycle and the heavy machine require tremendous force to lift. 4

I have indicated then that, so far as | keeping all wheels on

the road when cornering is concerned, the wider track, with two passengers abreast, scores well ; but it is as well to note its obvious disadvantages. I refer to the inevitable and bad effect on the steering. We all know how tiresome wide-tracked and heavily-loaded sidecars are, and the effect of getting much more weight at a considerable distance further from the main track of the bicycle would not require demonstration, in the writer's opinion.

It is only necessary to say that the contact and friction of the sidecar wheel with the road may be regarded as a brake on an obstacle out of the main track.—*Motor Cycling*.

76. CRITICISM OF A COMPANY'S ANNUAL REPORT

THE optimism of the directors as expressed in the first annual report proves, as we foretold, to have been very badly inspired. In commenting on that report we remarked :— " Altogether, then, this first report of the Company, so far from being a gratifying document, is a very disillusionising one, and we think the directors are open to the suspicion of closing their eyes to the true state of affairs. They are, indeed, repeating the mistake of the prospectus of being far more sanguine than the known facts justify." These observations were called forth by the assertion of the Board, among other things, that the trade created was of a permanent character, and that this should ensure a "substantial net profit" for the current year. How well our criticism was justified is shown by the new report, which came out yesterday, and which discloses not a "substantial net profit," but a loss of £33,200 ! In the first year there was a small profit nominally of £1,300, but this was only secured by carrying £34,000 of the advertising expenditure to a suspense account, where it remains still awaiting liquidation. The gross profit on sales has tumbled down from £86,500 to £41,800, a clear proof that, as we have pointed out, the big turnover induced by sporadic outbursts of publicity cannot

with safety be regarded as business that will be retained. The amount charged to revenue this time for advertising is £23,300, as compared with £35,000 in 1912-13, and has produced relatively considerably less results. || The only 2 satisfactory feature of the situation is that all the work is now concentrated in the factory at Hayes, the premises near the New Kent Road having been given up. There is, of course, | again nothing for the preference shareholders.

An examination of the balance sheet is not calculated to make the proprietors enthusiastic. With the exception of the £2,400 cash at bankers and in hand, | and possibly the £82,800 spent on the new factory, we should hesitate to say that any of the tangible assets can be accepted at their face value. The goodwill and | the lease of the New Kent Road property again appear at £176,900. The goodwill proportion ---£175,900---based on four months' abnormal trading, || 3 is obviously not worth that sum, and the £1,900 assignable to the lease may be treated as negligible. Moreover, since the premises have now been abandoned, the £7,700 | spent on them is as good as lost. Patent rights and trade marks at £50,500 are a wasting asset, but have not been depreciated, and could not be expected to | realise anything like the figure mentioned. The £35,000 investment in Health Fads has been written down by £5,000, leaving £5,000, as compared with £21,000, paid up. | This shows the value already put on the holding. The various suspense accounts awaiting to be written off total no less than £49,300, and include preliminary expenses, advertising outlay || and debenture stock com- 4 mission. There is in addition the debit balance at profit and loss of £31,900, which will have to be provided for out of future earnings. We | warned the public at the start in 1912, and our warning was reiterated on the issue of the debenture stock last year, of the exceedingly speculative character of the enterprise and of the undesirable | aspects of the promotion, and those who took heed of our advice must now congratulate themselves on their wisdom in following our counsel. The directors say that the gross profit made on selling the Company's |

own manufactures is now "eminently satisfactory," and it is not, of course, impossible that better fortune in the future may mitigate the errors of the past. The directors have at least disclosed the position fairly || in the balance sheet.—*The Financial Times*.

77. THE COLOURS OF ANIMALS

THE Zoo is, perhaps, not the best place to study the colours of animals to the best advantage, since we do not see the animals in their natural surroundings, and cannot therefore appreciate to the | full the significance of the varied colours we observe. An inquiry, however, into the meaning and causes of animal colour may not be unprofitable and, with the exercise of a certain amount of imagination, | it will not be difficult to realise its full value.

The colours of animals are due to two causes—either (1) to the presence of pigments on the surface layers of the body, which absorb | certain elements of white light and reflect the remaining elements, the reflected light giving the colour of the pigment and therefore of the animal, or (2) to the structure of the surface layer of the || skin of the animal, which, acting as a prism, splits up white light and produces an optical colour which changes with the point of view—as, for instance, the metallic, iridescent, mother-of-pearl tints | familiar in certain animals. The colouring matter of wild animals is usually confined to the external covering of the body—to the hairs in mammals and to the feathers in birds, the actual skin beneath | the hairs or feathers being pale or without pigment. In those animals like the elephants, rhinoceros, and whales which have lost the covering of hair, such loss is accompanied by a special development of pigment | in the skin.

The most important use of colour is to enable an animal to conceal itself from its enemies or to aid it to approach its prey unseen. This may be achieved in two || ways—(1) by 2 the animal resembling in colour as well as in form some special

object of no interest to its enemies, or (2) by the animal harmonising generally in colour with its surroundings. Two beautiful examples of the first method may be seen at the Zoo in the Caird Insect House, where examples of the stick-insect and leaf-insect may be seen. The former resembles in shape a twig or part of the stem of the plant on which it lives, while the latter resembles a leaf of its food plant, and both are green. These insects are wingless and remain almost motionless by day. The close resemblance which they show, both in form and colour, to the plants on which they live renders them almost inconspicuous and protects them from the attentions of birds and reptiles which would otherwise prey freely upon them. Another well-known example of such harmonising coloration may be observed in the Reptile House, where specimens of the chameleon may be seen. The value of their general green colour as a protective measure is increased by the power they possess of altering the tone of their colour to blend with the particular tone of green of the plants upon which they settle. There is no doubt, also, that the protective colouring of chameleons aids them in the capture of their food, which consists chiefly of insects. By lying motionless in the trees, which they resemble in colour, they are unobserved by the insects upon which they feed. Most of the mammals and a great number of birds are coloured to harmonise with the general colour of their surroundings. Examine the mammals you see at the Zoo and note, first, the general uniformity of the tone of their colour—a general brown, grey, or dun tint. Notice, secondly, that they are usually darker above and paler on their under-surfaces, and yet the effect from a distance is that of a monotone. The reason for this may be understood from a consideration of the effects of light and shadow. If the animal were actually monotonous in colour, the shadow cast by the upper part of the body on the lower part would have the effect of darkening the latter and throwing up generally the form of the animal when seen from a distance. As it is, the shadow of the upper part of the body on the paler under surface just balances

the dark tone of the back ; the general effect is monotonous, and the animal is rendered inconspicuous.—*The Home-Reading Magazine.* 5

78. QUALITATIVE ANALYSIS AS A SCHOOL SUBJECT

IN the early days of science teaching in our schools qualitative analysis played an important part in the practical work, but gradually it has been superseded by other things, so that to-day it is scarcely to be found in the school curriculum at all. Surely the reason for this cannot be that qualitative analysis is devoid of all value as an educational subject, or even that other branches of chemistry offer greater scope for teaching purposes? If carefully considered, it would seem to me, that when properly taught, qualitative analysis offers exceptional advantages, although it must be admitted at once, that everything depends on the way in which such a subject as this is presented. For unless the principles underlying the processes are clearly understood and appreciated, the work may be merely mechanical, and so lose all educational value. But this is a difficulty that arises not only here, but in almost all other branches of science. The responsibility is with the teacher ; it all depends on him as to the point of view his pupil takes up. |

Let us look, then, very shortly at some of the advantages of this now rather old-fashioned and despised subject. To begin with, the apparatus required is simple, and the cost of materials is small—an important item in these days. Then a considerable amount of work can be done in a little time, perhaps more than in other branches of practical chemistry. Fairly large classes can be taken at the same time without undue inconvenience, and the pupils can work separately, and so avoid any risk of such things as “sleeping partners.” Qualitative analysis never fails to create interest, and this is more than can be said of some other things which boys are called upon to learn in school. Moreover, it 2

is one of the fundamental duties of the teacher to see that the lessons he provides are as full of interest as possible. If a boy finds his work dull and boring, he cannot derive much good from that particular task, and there is probably something wrong either with the subject itself or the master. A boy instinctively wants to know what things are made of. This instinct has been with him from his very early days; as a little child he broke his toys, later on he pulled his watch to pieces, a kind of analysis; later still he loved to construct things—that is, to find out what things were made of by synthesis, or negative analysis, and so it comes about that finding out what substances are in the school laboratory specially appeals to him. In qualitative analysis the boy feels he is doing something real, and so he is interested. 3

Then qualitative analysis enables a boy to understand, if it is carefully pointed out to him, the exact meaning of such terms as precipitation, double decomposition, solution, sublimation, etc., in a very practical way. There is all the difference between learning these things theoretically and learning them practically. This same result may, of course, be obtained by other forms of practical chemistry, but possibly not so conveniently.

Again, if the equations of the various reactions are practised, and duly recorded in a note-book, a good deal of useful information will be acquired. The pupils must be able to understand clearly what they are actually doing when they carry out their tests. It will be easy to show them how certain reactions can be classified. How, for example, the result of treating any sulphide with sulphuric acid is always to produce sulphuretted hydrogen, and the sulphate of the metal. This leads to a better idea of the methods involved in the preparation of gases. The preparation of other things as well can usefully be connected with this kind of analysis. Boys can, by this means, be led to think of general cases instead of individual reactions. They will also learn to expect certain things to happen under particular circumstances, and this must needs be a valuable habit to acquire. 4

Also, such work as this trains, or should train, the power of observation, and helps to develop the capacity of putting the correct interpretation on the results obtained. ||—*The School World*.

79. MAINTENANCE OF PERMANENT WAY

CERTAIN classes of limestone should be avoided as they weather badly, and in course of time, under heavy loads, degenerate into dust and mud.

The object of ballast is to receive the shock from the | sleepers due to the impact of passing trains and distribute it evenly over the surface of the earth beneath. It should give elasticity to the road and also confine the track in place, for any | movement of the earth beneath must be avoided. For these reasons there should be no starving of the line by scarcity of ballast, as any short-sighted economy in this respect cannot do otherwise than | weaken the track. It is the best practice to ballast the road up to sleeper level and for about 18 in. beyond the ends of the sleepers. The practice of ballasting the road so as || to cover up sleepers and keys, as sometimes done, is not to be recommended, as any inspection of the road is rendered difficult, and extra labour is required for opening out the track for repairs. |

It is of the utmost importance, and every precaution should be taken to ensure efficient drainage of the road, and on no account should water be allowed to accumulate. The various drainage arrangements adopted depends | upon local circumstances; in cuttings, it is best to lay pipe drains at the sides of the line, and connect these up at frequent intervals with pipes laid transversely from the centre of the road. | Too much attention cannot be given to drainage questions when planning the initial construction of a railway; the lack of efficient drainage in the first instance results in much trouble and expense in future maintenance. ||

The object of sleepers is to distribute the weight supported by the rails over the surface of the ballast, and up to the

present time the problem of finding a suitable substitute in place of timber for sleepers has not been solved, as far as British railways are concerned. Cast-iron and wrought-iron sleepers have been tried and discarded, and the value of reinforced concrete sleepers is yet to be proved. There are many points in favour of timber sleepers, and under ordinary conditions they are good for fifteen to twenty years, although their life is variable, depending upon circumstances and conditions. Sleepers fail through rotting in the ground and through the chairs being driven down and splitting the fibres asunder. They should be subjected to some preservative process before being laid in the road, and placed in the line with the heart side downwards. After removal from the line, some of the sleepers are serviceable for use in sidings, others being convertible into fence posts and such useful purposes, and the more defective disposed of for fuel.

Most railways are now adopting rails of British standard sections, running being restricted to the one head only. The rails are manufactured under rigorous supervision, and subjected to both chemical and mechanical tests to establish the character of the material.

Rails usually wear away from the abrasion caused by the weight of the wheels sliding along them, and the rate of wear depends upon the weight of the original section, class of rolling stock, description of the traffic, and the position in the line.

Rails wear more in tunnels than in the open air, owing to the oxydising effects of sulphurous fumes, and the continual dripping of water, together with the absence of sun and wind, produces considerable loss of weight through rust. Rails wear more on gradients than on the level line, and more between the platforms of stations, in the latter case due to the extraordinary amount of friction to which they are subjected by the continual stopping of trains. On curves, the outer rails are frequently worn to a considerable extent on the running edge by the grinding action of the wheels. It is the practice to annually check the wear of rails, and

this is done either by weighing the rail or | by measurement. When the rails have worn down to the minimum weight fixed for safety in main lines they may still be heavy enough for serviceable use in branch lines and sidings where traffic is || much lighter.—*The Railway News*.

80. REMOVING STAINS FROM STONEWORK

IN the first place, it cannot be insisted upon too strongly that no stone now accepted as a standard in the market contains within itself the elements of staining or discoloration. It may change its | colour somewhat in weathering, but this will be in the way of a mellowing of tone, and will give no unsightly blotches. This is proved by the natural exposure of the rock in the quarry. | Where there is staining in the walls of a building, it can safely be set down to faults in the setting, or to some cause extraneous to the stone itself.

The most prolific source of | trouble, says a writer in *Stone*, is, of course, the cement that is used in setting the stone. Ordinary Portland cement will badly stain almost any stone. Various so-called "non-staining cements" are widely || heralded, but it is the universal experience of stonemen that little dependence can be placed on these. In the old days, before cement was so widely used, architects rarely had to complain of staining. There | are thousands of buildings that have stood for half a century or more that show only the kindly mellowing of time, save for the effect of smoke and dust incidental to city life.

Architects will | specify very particularly that stone be set in cement mortar and think that they guard against all trouble if they require the back and sides of the stone to be coated with waterproof paint. Undoubtedly | a good paint is much protection, but the difficulty is to coat the beds and joints of each stone clear to the face. A narrow strip left unpainted will permit the carrying of the discolorating || moisture from the cement to the face of the stone by capillarity.

All of this trouble could be avoided if the architects would

only insist that the stone be set entirely in lime mortar, made | in the following proportions : one part lime and three parts sand. The lime to be thoroughly slaked and the sand well tempered ; all mortar to lie in the pile at least twenty-four hours before using ; | all sand to be clean, coarse, and free from loam. If the most delicate stone is set in mortar as above, and the back of the stone plastered with the same mortar, it positively will | not stain. There is another way in which stone may be stained—by the drippings from concrete floors or roofs. In such cases the discolouring moisture runs down the face of the stone, and no || painting of the back or beds can afford any protection. The utmost care in superintending the construction is the only safeguard from this disfigurement. 3

Cement stains cannot be eradicated by any wash or other treatment. | Fortunately, they are apt to bleach out in time under the influence of the sun and the weather. The architect and the owner alike are naturally greatly exercised when cement stains appear, and try to | seek some immediate remedy. The only thing to do is to have patience and wait for the natural bleaching, which may take weeks or even months. The stone setter, anxious to leave a building in | spick and span condition, may suggest that it be washed down with muriatic acid. This should never be permitted. The acid may take out some of the stains for the moment, but it burns the || surface and eventually will discolour even 4 those portions that escaped the original staining.

There was a time when scrubbing with wire brushes was permitted, but this has generally been discarded, since its bad effects have | been recognised. It is impossible to use wire brushes without leaving a coating of iron on the surface of the stone, and this is bound to leave a worse stain than it corrects.

The sand | blast is sometimes employed, but generally for old buildings that have become discoloured from smoke and soot. This method should always be discouraged. The sand strikes the stone with a tremendous impact. It destroys

the "skin" which forms on the surface of the stone by deposition of mineral ingredients on the evaporation of the interstitial water. It also stuns the grains or crystals of the stone and tends to hasten the weathering.

81. THE ECONOMICS OF MARINE FUEL

THE great factor to-day in ocean-transport is fuel. Ship and engine have been greatly improved, methods of conducting the business have changed, routes have been modified, and a further modification is confidently expected with the opening of the Panama Canal; throughout all these, and above them all, dominates the commodity whence the power for driving the vessel is obtained.

It is no exaggeration to say that the nations which control the resources whence motive power can be produced, will in increasing measure have the opportunity of dominating the rest of the world. But incumbent on them is the necessity of so exploiting and developing their resources that they may obtain a maximum of power at a minimum of economic waste. The generation of artificial productive power will, as the importance of purely destructive power wanes, become increasingly the great factor in deciding the status of nations. Nor is this an entirely new situation. The important novelty is that artificial methods for producing power for practically all purposes, but notably for propelling ocean-going vessels, have proved their complete superiority over all old-world and natural methods. Whence it arises that the people, who have the acumen to take the fullest possible advantage of the new position, will, provided that their resources are adequate, and their inherent qualities are sufficiently virile, be able to take and retain a place in the front rank.

The fuel resources of the world to-day consist, for the purpose here in question, of coal and oil. The countries enjoying in the greatest degree resources, either worked or unworked, are the British Empire, the United States of America, the Russian Empire, and China. All these, 2

except perhaps the last, are aware of the great issues at stake, and China is awakening to a sense of her great advantages, and to a knowledge of the vast resources which have hitherto lain | undeveloped in her widely stretching dominions.

Here then is a question of world-wide interest, one important section of which can be studied to advantage in considering the economics of marine fuel.

The evolution of the | modern marine engine is a story of consuming interest ; here it is only possible to give an outline of the main points.

No sooner had James Watt produced a steam engine, than attempts were made | to apply steam power to ship propulsion. At first the experiments were almost grotesquely unsuccessful. But the men at work on this development were men of grit, nor could any failure daunt them in their || efforts. The chief spheres of action were the West of Scotland and the North-East coast of America ; with the result that both Britain and America claim the honour of having been the first to | propel a water-borne craft by steam-power. 3

Two facts, however, stand out among a great mass of controversy, and these should please the pride of both countries. In the year 1802, William | Symington built and engined the *Charlotte Dundas*, a small craft which ran on the Forth and Clyde Canal, and was proved to be efficient for both passenger and goods services. This little craft was the | germ whence sprang the *Clermont*, built by Robert Fulton at New York in the year 1807, and the *Comet*, the first steamer to run regularly in European waters, built by Henry Bell || on the Clyde in the year 1812. Thus Symington solved 4 the problem of steam propulsion by the construction of the *Charlotte Dundas*, whilst Fulton was the first regularly to utilise the invention | on any scale, for he ran the *Clermont* on a regular service between New York and Albany, a distance of about 130 miles, from the year 1807.

From the | beginning of last century there were two great possible developments in the business of ocean transport, the substitution of iron for wood as the material for ship

construction, and the improvement of the steam engine | to a point at which steamers could compete on commercial lines with sailing ships for the carriage of freight. Nor were these separate problems, for really the success of either depended on a common development. ||—*History and Economics of Transport.*

82. TRIAL TRIP IN A SUBMARINE

'EVERY man to his station now. Stand by!' shouts the skipper. The fifteen men of the crew are distributed through the submarine, each man at his post. One at a time now the valves | are opened and the water rushes into the tanks. There are three ballast tanks, two trimming tanks, an auxiliary tank, an adjusting tank, and several other receptacles. The submarine is so built that water taken into | one tank can be blown into another the length of the vessel simply by the manipulation of levers and pumps under the thumb of the engineers. We are now engaged in the process of "trimming." |

"All ready now," shouts the captain. And in another minute, "Take 300 lb. into the forward trimming tank." The valve is opened and the rush of swirling water can be heard. The submarine commences || to settle forward.

"Pump 200 lb. into the trimming tank aft," shouts the skipper. The man aft repeats the order. The orders and repeating of orders sound like the chanting of a litany. The | captain keeps on filling and emptying tanks. "Blow 200 out of the adjusting," means that much water is blown out of one of the tanks by the force of compressed air. The process continues | until the vessel is submerged on an even keel and finally floats in a sort of state of "suspended animation."

Nothing but the sea stretches in every direction save for the far-away coastline. Now we | see our floating prison settling in the water. She goes down gradually by the head. Foot by foot we drop closer to the water. As a matter of fact we are actually under the water || and looking out over 2 the surface through the periscope. Another minute and the

waves come up to meet us—and we are gone ! The periscopes are under and we are down 25 ft.

Below | the conning tower they are manipulating the tanks. The process is something like balancing a carpenter's level. The depth dial alone tells us how deep we have submerged. All hands are intent upon the slim | little black indicator. All at once the hand begins spinning rapidly and we begin going down fast. The foot marks fly by the indicator and stop with a jerk at 42. The keel of | the vessel is 12 ft. below the indicator hand, and that means that we are down 54 ft.

Not until after the trip was all over did we know—that is, the unsophisticated passenger—that || the submarine has suddenly tilted “off balance” and has slid down to the bottom of the harbour entrance. 3

But on the next trial the static dive was successfully negotiated, and we floated 30 ft. down, | balanced like an acrobat on two legs of a chair. At this juncture we tried a “safety first” device which has been adopted on all submarines. The captain set a trip contrivance at 35 ft. | This meant that when we had submerged to a depth of 35 ft. the mechanism would trip and send the vessel up to the surface in a jiffy. Again the tanks and valves are adjusted | and we settle downwards. At 33 we are still sinking—at 34 still going. As the indicator hand moves from 34 to 35 there is a sudden clutching somewhere in the vitals of || the submarine, a jolt all over, and the indicator hand starts going the other way. 4

In less than thirty seconds, going at elevation speed, we are lifted out of the depths as though some supernatural | power had reached down suddenly and torn us from the bed of the ocean. This “tripper” can be set at any depth, and unless the submarine has been disabled, is as sure as the sun. |

After the static dive we come up again and, very frankly, there is some sense of relief to the uninitiated. What would have happened if our boat had stayed down on the bottom ? If no | rescuers had come to our aid each man would have been shunted up into the conning tower in turn, the air pressure turned on, the hatchway opened, and the man “blown

out." If he had || a good heart he might have reached the surface—and then have had to swim for life.

83. THE VOICE AS A MUSICAL INSTRUMENT

THE singing voice holds a unique position in music, not only from its quality of tone but also from the fact of its being associated with the articulation of words. Vocal music, as we all | know, requires for its basis the co-operation of words which are generally, but not necessarily so, in the form of some poem. No mechanism has ever been invented which will enable an instrument to pronounce | words. So it may be assumed that the great distinction between vocal and instrumental music is that vocal music is music with words, instrumental music is music without words.

When the voice is used in | combination with an instrument or with the orchestra, it is generally the custom for the instrument to accompany the voice ; but there are numerous instances in the works of the best composers in which the || voice, whether as a solo or collectively as a chorus, is employed for the purpose of giving colour to an orchestral score. The voice may then be said to be taking the part of an | instrument. It may be contended, that whenever the voice is used, its local colour of tone can never be mistaken for that of any instrument. The same may be said of the organ which, with | the exception of certain stops, is unlike in tone to any orchestral instrument.

That the voice, either alone or in numbers, is, as we have said, often used to aid orchestral effect is evident if | we examine the scores of many works of the great masters. It may indeed be safely asserted that whenever the subject matter is given to the orchestra whilst the singer is taking a subordinate part, || the voice is in that case only used for giving colour to the whole, just as an instrument would be employed for the same purpose. That Wagner frequently avails himself of this method of using | the voice is proved by the many occasions one meets with in his works, where the musical interest lies almost entirely with the orchestra,

although the voice is taking part in order to give extra colour. For this reason arrangements for orchestra alone of the most celebrated numbers of his works are exceedingly effective and universally popular. It may here be remarked that some of the most popular vocal numbers of other composers if arranged for orchestra alone would lose all their interest. Take, for example, Mendelssohn's psalm, "Hear my Prayer"; this beautiful work if it were transcribed for orchestra would sound tame and ineffective. || The reason for this is that the voices with one exception are not used for colouring the score, but only as an exponent of the sacred words. The exception alluded to is where the solo soprano repeats the theme, "O for the wings of a dove," for at this point Mendelssohn uses the chorus for enhancing the effect of the orchestral accompaniment to the solo voice, thus affording an excellent example of voices being employed as if they were instruments. It is true that words are given to the chorus, but this is merely done to make it more interesting to the choristers. These words, in fact, go for nothing, and if left away would not be missed. In fact, if they were heard too plainly, they would seriously interfere with the text given to the solo voice and produce a jumble of words. This device of using the chorus as part of the accompaniment to the solo voice is often employed in oratorios and cantatas. In certain unaccompanied vocal pieces it is likewise in evidence, and in some cases the chorus does nothing more than give the harmonies to the melody by singing without the aid of words. There are not a few examples among French part songs of wordless choral singing being employed as an accompaniment to the melody. It would appear therefore, that when voices are used for the purpose of giving colour to the general effect or for supplying harmonies words are not really required. On the other hand, in all real vocal compositions, the words are a special feature whether the composition is for a solo voice or for chorus. The florid cadenzas are out of fashion even in opera.—*Musical Opinion and Music Trade Review.*

84. THE SELECTION OF AN ARBITRATOR

IN regard to this legal knowledge it is important to remember that it is the duty of an arbitrator to refer legal questions to the court by way of case stated, but where an arbitrator has legal knowledge of his own he can usually dispose of any such points to the satisfaction of both parties, and thus save the additional expense of what is in fact a new case entirely, because it has to go in the form of an action before the High Court. It is surprising how much additional expense can mount up when such an eventuality arises—especially if (as frequently happens) eminent counsel have to be engaged. Here, then, is something to be said in favour of having an arbitrator with a legal training—though it is important that the gentleman chosen shall have a sufficient modicum of the requisite technical knowledge as well.

But there are other grounds upon which complaint is often made of the unsatisfactory termination of arbitrations. The arbitrator in too many cases misconceives the object of his appointment. Too often he takes the view that he is an assessor—that, in fact, he is to “fix the damages.” Now it may very well be that it is his duty to dismiss the claim by not awarding anything: or, on the other hand, it may be his duty to award the whole sum claimed. In too many cases he does neither: he “splits the difference” between the parties, and congratulates himself upon having done even justice between them. But this is sheer proof of incapacity to grasp the issues—and in all probability means grave injustice. One might even go as far as to say that many arbitrators go astray by reason of their local knowledge and prejudices: the answer to which is that disputants should never appoint a local man to arbitrate between them. Remember, too, that a man is not a good arbitrator simply because he holds an eminent position in his profession. A good arbitrator must have a judicial mind and not be afraid to exercise it: technical knowledge is only helpful to the understanding of the case. On the other hand, it is equally

a mistake to employ a busy advocate as arbitrator. The keenest and most successful barristers make by no means the best judges : they tend to become one-sided and, moreover, a barrister with a moderate practice is generally preferred as arbitrator to a keen busy man whose only thought is to get it over and rush off to the next engagement. The reason why many barristers do not obtain big practices is that they are too careful and not sufficiently unscrupulous : therefore if you choose a barrister as your arbitrator do not choose a busy one. Choose a man who has time on his hands and a reputation to gain. 3

There is one class of arbitration that has been fairly prolific of late—the arbitration of claims for compensation for unreasonable disturbance. This is essentially a difficult matter, and the number of appeals to the High Court upon legal points arising out of these arbitrations has already been considerable. Landowners and estate agents have a special interest in this matter, because the average farmer who feels that he has a grievance usually puts a fairly high estimate upon his alleged losses, and there is always a danger lest a weak or inexperienced arbitrator may allow himself to be unduly influenced either by sympathy for a man who pulls a long face, or by reason of his want of capacity to sit evidence such as is frequently made use of to bolster up and exaggerate a case, and so may be responsible for injustice towards the landowner. 4

Any landowner, therefore, who finds himself faced by the prospect of an arbitration should at least adopt the three following suggestions : (a) Choose, if possible, an arbitrator who has had a legal training ; (b) Avoid an arbitrator with too close a knowledge of local affairs ; and (c) arrange all questions about fees, etc., beforehand. 2

If these bed-rock principles were always kept in view the result of the average arbitration would be much more satisfactory than often is the case at present.—*The Estate Magazine.* 5

85. IRRIGATION IN INDIA

WHILST in the Eastern portion of the Northern Plain the system of irrigation has developed into an intricate network of main and branch canals and distributaries following the major and minor divides, and involving the latest engineering science and experience in their construction, there is still a very primitive type of irrigation from the River Indus. Canals have been constructed, taking off from the river, but above the low-water level. These inundation canals are filled during the flood season and enable summer irrigation to be carried on for as long as the level of the river is as high as the canal. But this primitive type of irrigation probably cannot continue with the large schemes in the Punjab to draw off all the water supply from the chief tributaries of the Indus. In this province, in addition to the already existing canal systems of the five rivers, which have been gradually extended to their full capacity, there are to be large canals to draw off the surplus waters of the Jhelum and Chenab, to irrigate lands in their upper basins and finally along the lower course of the Ravi. The Ravi is a comparatively small river, and practically all its waters are taken off by the older canal to irrigate land in its upper basin. Now, the surplus waters of the Jhelum, after irrigating land between the two rivers, are to be conveyed into the Chenab to supply the existing system of irrigation. This enables another canal to be taken off, considerably higher up the Chenab river, to irrigate land in its upper basin, lying between the Chenab and Ravi. The canal is dropped into the Ravi and taken out again on the other side, the various volumes being governed by regulators. This extensive scheme has been assisted by the south-westerly slope of the land, which enables canals to irrigate all lands to the south and west of it by gravity.

The most typical crops under irrigation are rice in the river deltas of Southern India and wheat in the Northern Plain. It is warm enough to grow rice all the year round in the Deccan, and the great desideratum therefore is plenty

of water, so that except in Bengal, where the rainfall is very plentiful, it is entirely dependent on irrigation. Wheat in India is also dependent on irrigation, since as a crop of the temperate regions it is best suited to the Northern Plain in winter, and in the western part of this region there is little or no rainfall. Other cereals which often require irrigation are millets and pulses when they are grown outside the black cotton soil region. It is warm enough to grow the sugar cane in India, and except in Bengal it is dependent on irrigation, as it requires a great deal of water. For this reason its cultivation is shifting to the Northern Plain, where methods of irrigation are more advanced and suited to such a crop. The best types of cotton are also irrigated, as they flourish most in the alluvial soils of the Northern Plain and especially in the western region, where the heat is very great, but the rainfall is insufficient. The similarity between the climate and soil of Lower Egypt and Sind led to the experimental cultivation of Egyptian cotton in the delta of the Indus, which has proved fairly successful, as also the introduction of American cotton into the Punjab. The inferior types of cotton, on the other hand, are grown without irrigation on the black cotton soil of Bombay, and even in the spurious cotton soil of Madras. Other crops which are sometimes irrigated are indigo, the poppy, and tobacco, this last from well water for the sake of the nitrates, whilst an inferior yellow tobacco is obtained by irrigation from salt wells.

A word must be said with regard to irrigation revenue. This is derived from a rate on the occupier for the use of the water and a rate on the owner of the land for its improvement through irrigation. Geographical considerations have made it easy to consolidate the two rates on the landowner—for the land and its improvement through irrigation—in Madras and Sind from the first.—*The Geographical Teacher*.

86. A REAL BIOGRAPHY

THERE are rarely more than four or five men living in any country at the same time whose autobiographies are worth

two volumes. Men of initiative and men of research are alike in this, they seldom have the time needed for the rather tedious work of recollection and reconstitution. But here and there we find the man of spacious life and experience in many fields who has both the leisure and the pen for the task, and among them Lord Redesdale is to be set high. He has the gifts of quick and certain memory, of grace and courtesy in the use of his reminiscences, and a natural style that puts a reader on friendly terms with him at once. His field of experience has been cosmopolitan indeed; his recollections are drawn from his official experiences in a great part; in an even greater part from his personal friendship, the responsibilities of which he has handled so carefully in these volumes.

For many years Lord Redesdale has occupied a position which of necessity makes his autobiography of especial importance. That he is by his own confession beyond his sixties does but emphasise the fact that he has viewed the remodelling of the international political world in a manner which few can pretend to rival. That he is a link with the days of the dandies would have made his memories interesting, in whatever form they had been cast, and not the least valuable personal touch is the photograph which forms the frontispiece to the first volume. But Lord Redesdale's life has been one of unremitting work and of many confidences, and it is high praise of this book to say that he has throughout kept the balance between discretion and friendship.

To those who know him best this work will not seem so much unnatural as unrepresentative; for it scarcely reveals the fact that the man of affairs who was the friend of all the world as well, was also an expert in one or two rare departments of human knowledge. Lord Redesdale knows more about bamboos than any other living or dead botanist; possibly also he knows more about Japan than any other Englishman except two; yet he lays stress on neither. To many men this exceptional position would have been a great temptation. But upon no subject is there much dogmatism in his pages—except, perhaps, in a personal dislike of Lord

John Russell—and a reader in the next century would scarcely gather that he was one of the most welcomed | figures in social England. Of late years an increasing deafness has made him less willing to mingle in society, but if that unwillingness has been, as is alleged, the opportunity that has brought to birth | this autobiography, a reviewer hesitates between sympathy and congratulation. It is one of the best books of the last five years.

But it is time to allow him to speak for himself. After a vigorous | defence of King Edward against the version of his life which appeared in the *Dictionary of National Biography*, he makes a note of his late Majesty's literary and scientific preferences which is of great interest. ||

One side of his nature was curious. He was essentially a shy man. He would enter a room to meet some visitor whom he had summoned, sidling up, as it were along two walls of | it before stepping forward to hold out his hand. That same shyness accounts for a good deal in his character; for its aloofness and, above all, for an apparent dislike, strange in so able a | man, to surround himself with all that was best and most distinguished in science and art. Such men as Darwin, Huxley, Hooker, Tyndall were practically unknown to him. He preferred the second rate. So in | art, as portrait painter he was satisfied with Landseer and Winterhalter. Landseer no doubt was an excellent delineator of dogs and deer, but it did || not seem to occur to the Prince that a man might be a 5 first-rate painter of animal life and yet fail signally with kings and queens.—*Daily Telegraph*.

87. THE PRIZE COURT

HIS Lordship, continuing, said—

I desire to consider whether The Hague Convention is operative and applicable. I cannot close my eyes to the provision in Article 6 of the Convention, which reads as follows—

“The | provisions of the present Convention do not apply

except between contracting Powers, and then only if all the belligerents are parties of the Convention."

By Articles 7 and 9 the Convention requires to be ratified | by the signatory Powers, and by Article 8 non-signatory Powers may accede to the Convention. Similar articles appear in the other Conventions. Of the belligerents in the present war at the time of the capture | of the vessel, Germany and Austria-Hungary, and Belgium, France, Great Britain, Japan, and Russia had ratified the Convention (Germany and Russia making reservations of Article 3 and part of Article 4). Of the other belligerents || Montenegro and Serbia (whose representatives signed the Convention) have not ratified it. Turkey, who is now also a belligerent, has not ratified it. None of these States were non-signatory Powers, so there has been no | accession on the part of any of them. In strictness therefore (apart entirely from the question whether the enemies of this country are acting under or in accordance with the Convention), it is not clear | that the Convention is binding or applicable.

It is not my function to do anything more than to declare the law. But I trust to be forgiven for an expression of opinion that it would | accord with the traditions of this country, if such steps were taken as may be necessary to make operative a series of Conventions solemnly agreed upon by the plenipotentiaries of forty-five States or Powers after || most 2 careful deliberation, with the most beneficent international objects. Of the belligerents Montenegro has no navy, and, so far as I know, no mercantile marine; it has a coastline, but only of about thirty miles; | and Serbia is a purely inland State, having no seaboard at all. It would scarcely seem desirable that the non-ratification by these Powers should prevent the application of the Maritime Conventions; and it may be | that the counsellors who have the responsibility of advising the Crown may deem it fit to advise that by proclamation or otherwise this country should declare that it will give effect to the Conventions, whether | by the literal terms thereof they are strictly binding or not.

I will now consider whether the owners of an enemy vessel have a right, or should be given the right, to appear to put || 3 forward a claim under the Conventions, assuming, as was done during the argument, that they are operative. Dealing with The Hague Conventions as a whole, the Court is faced with the problem of deciding whether | a uniform rule as to the right of an enemy owner to appear ought to prevail in all cases of claimants who may be entitled to protection or relief, whether partial or otherwise. Mr. Holland | argued that this is a matter not of international law, but of the practice of this Court. That view is correct. I think that this Court has the inherent power of regulating and prescribing its | own practice, unless fettered by enactment. Lord Stowell from time to time made rules of practice, and his power to do so was not questioned. Moreover, by Order XLV of the Prize Court Rules, || 1914, it is laid down that in all 4 cases not provided for by these rules the practice of the late High Court of Admiralty of England in prize proceedings should be followed, or such | other practice as the President may direct. The rules do not provide for the case now arising. I therefore assume that as President of this Court I can give directions as to the practice in | such cases as that with which the Court is now dealing.

The practice should conform to sound ideas of what is fair and just. A merchant who is a citizen of an enemy country would | not unnaturally expect that when the State to which he belongs, and other States with which it may unhappily be at war, have bound themselves by formal and solemn Conventions dealing with a state of || war like those formulat 5 ed at the Hague in 1907, he should have the benefit of the provisions of such international compacts.—*The Times*.

SECTION VIII

150 WORDS PER MINUTE

88. SMOKELESS FUEL COMPANY MEETING

GENTLEMEN,—Of the balance-sheet little need be said, save that, inasmuch as it exhibits a simpler and more concise picture of the company's financial affairs, it is perhaps better than most of its predecessors. The capital authorised remains | the same, as do the Deferred shares issued, while there has been an increase of 4,000 in the number of Ordinary shares issued in connection with the scheme of reorganisation carried out last year. Of the | Debentures the Five per Cent. First Mortgage Debentures are about to be paid off, consequent on the sale of the Barking property, on which they were secured, and there has been an addition made to the number | of Second Debentures issued in order to provide capital to meet establishment charges and discharge our indebtedness in various directions. As you will see by the balance-sheet, our indebtedness at the end of the financial year under || consideration still amounted to some £1,000 for accrued Debenture interest, law charges, loans, etc. On the other hand, we have to set against the extinction of our First Mortgage Debentures the loss of the Barking land. | The original cost of this was £145,000, and, as you will see, it is brought into the balance-sheet at £148,000 ; it was sold by the previous Board for | £71,000. However, that was, as I have said, the act of a previous Board, and it is not my province to judge the acts of our predecessors. The next item on the credit side, | the Wednesfield land, should, on the other hand, prove to be worth a great deal more than its purchase price of £22,000. On this, as also on the Barking land, I shall have

a || word or two to say later. The other items in the balance-sheet explain themselves, as, for example, the amount in respect of commission, discount and expenses for the issue of the Second Debentures. The scheme of reorganisation sanctioned | by the shareholders was responsible for a good deal of this expenditure, as set out in detail in last year's accounts. No more need, I think, be said by me on the subject of the balance-sheet. 2

As you | will have seen from the front page of report, there has been an almost complete change in the composition of the Board, the only links connecting us with the past being the names of Mr. Wellington, our | consulting engineer, and Mr. Conchie. All the other directors have joined the Board within the past six months. The latest addition to our number is Mr. H. Willmott, who is well and honourably known throughout the length || and breadth of the country in connection with railway and other important undertakings, and to whose shrewdness and business acumen we attach much importance. Although I cannot profess that we have made ourselves fully acquainted with the somewhat | tangled past history of this company, it did not take us long to discover that we have succeeded to a rather troublesome legacy of debt. This we are, I am glad to say, gradually clearing off, and we | hope at no distant date that this burden will disappear from our books. For the present our only means of doing this is by placing some of our Second Debentures, and in the near future we hope | not only that our holding in Barnsley Smokeless Fuel Company, Ltd., will become a considerable source of revenue, but that the improved position of the company will enable us to place some of our unissued share capital. || As you will have learnt from the report, the completion of the sale of the Barking land and the consequent extinction of the First Mortgage Debentures should considerably improve the value of the Second Debentures, inasmuch as | they will then become the first charge on the company's properties. As I have just said, the purchase and sale of the Barking land does not, on the face of it, look 3 4

like a very good bargain. However, we hope that the £71,000 for which the land has been sold does not represent all we shall eventually obtain from the sale. The purchasers of the land are, as you know, the County of London Electric Supply Company, Ltd., and they propose to erect on a portion of the land a generating station. Negotiations are in progress with a view to working in co-operation with them on the lines of their taking from works to be erected the necessary gaseous fuel for use under their boilers in place of coal.—*The Financial Times*.

89. INSURABLE INTEREST

IN the previous article it was pointed out that fire and marine insurances are contracts of indemnity and indemnity only, that loss must be proved before the indemnity can be recovered, and that on this ground fire and marine insurance must be clearly distinguished from life and accident insurance.

Life insurances are not contracts of indemnity. They are independent of the value of the subject matter. In essence they are wagers, but this must not be understood as meaning that gambling in lives is permitted. Though the principle is that of a wager, we shall see that the requirement of an insurable interest renders mere gambling policies unenforceable.

The contract of life insurance has been defined to be that in which one party agrees to pay a given sum upon the happening of a particular event contingent upon the duration of human life, in consideration of the immediate payment of a smaller sum or certain equivalent periodical payments by another.

Although insurances are thus divisible into those which are contracts of indemnity and those which are wagers, there is one rule which applies equally to all. This is that there must be an interest to be protected. Speculative practices, though at some periods very prevalent, have always been regarded by the legislature with disfavour, and the history of the various kinds of insurance and of insurance law shows a

continuous effort to prevent insurance of any description being misused by being applied to speculative or gambling purposes. The proper purpose of a policy of insurance is the protection of an interest, and the object of the legal rules which require that there shall in all cases be an insurable interest as the basis of a policy is to confine insurance to proper purposes. An insurable interest is necessary in the case of marine, fire, and life policies, and a consideration of other legitimate purposes to which insurance has in more recent times been applied, such, for example, as insurance against loss of profits, will show that the purpose is always the protection of a definite interest. 2

What that interest is, the protection of which is the proper object of a policy of insurance, is to be understood by considering the nature of the contract of insurance. In this connection the definition by Mr. Justice Lawrence will bear repetition. "Insurance," he said, "is a contract by which the one party, in consideration of a price paid to him adequate to the risk, becomes security to the other that he shall not suffer loss, damage, or prejudice by the happening of the perils specified to certain things which may be exposed to them." 3

A risk of loss, damage, or prejudice, must always be present as an element of the circumstances in which a policy is taken out. An insurable interest is requisite by reason of the very nature of the contract of insurance (as distinguished from a mere gamble) but (apart from positive law) it would be open to the parties to agree to dispense with the obligation to prove the existence of an interest. Such a term of agreement was common in gambling policies, but it was found by experience that the making of assurances dispensing with proof of interest was productive of pernicious practices, and it was therefore enacted in 1745 that marine insurances made without further proof of interest than the policy, or by way of gaming or wagering, should be null and void. This statute was the Marine Insurance Act, 1745. 4

The Marine Insurance Act, 1745, has now been replaced by

the Marine Insurance Act, 1906, which enacts that every contract of marine insurance by way of gaming or wagering is void. | The contract is deemed to be a gaming or wagering contract where the assured has not an insurable interest, and the contract is entered into with no expectation of acquiring such an interest, or where the policy contains | words dispensing with further proof of interest than the policy itself. The Marine Insurance (Gambling Policies) Act, 1909, contains further provisions, in spite of which marine policies without insurable interest continue in use for | certain mercantile purposes. It is not proposed, however, to digress into details here, as the present purpose is to discuss the broad aspect of the question of insurable interest, and the various statutory provisions have been referred || to only as material facts in this connection.—*Journal of the Corporation of Insurance Brokers and Agents.* 5

90. DIRECT CURRENT MOTORS

THE most common fault met with on direct current motors is sparking. There are a great many causes of sparking, some of which are obvious, and others hard to deal with. A few causes have already been | mentioned. Some others may be dealt with. Brush rocker in the wrong position. This is a more common fault than might be supposed. The rocker should be moved in either direction until the best position is found. If | the motor can be run without load, and a speed counter is available, another method can be tried. Take the speed ; reverse the direction of rotation, and take it again. If the two readings differ move the | brush rocker, and continue until the speed is the same in both directions. This is the neutral position at no load. The position at full load may be found by moving the brushes slightly against the direction of || rotation. Brushes may be making poor contact. The brush may have worn low, the brush spring may be resting on the edge of the brush box, the holder may be loose on the spindle, or the brush | be sticking in the holder. In this last

case, it must be remembered that brushes swell when hot, more especially some of the softer varieties. Brushes will stick if the holders are too close to the commutator, through picking up dirt. On the other hand, if the holders are too far away, the brushes will chatter, due to lack of support at the end. The proper distance from the commutator to the bottom of the brush box should be from $\frac{1}{8}$ to $\frac{1}{4}$ of an inch. Worn bearings may set up sparking owing to an unequal distribution of the magnetic field. Bad condition of the commutator is also another common cause. || The usual troubles with commutators are—the mica between the segments standing high, and low commutator bars or flats. The first trouble may be due to the mica being too hard, or the copper segments too soft. | When this happens, the brushes instead of bedding firmly on the commutator are lifted slightly by the projecting micas, and kept in a state of vibration, the circuit is partially broken, and continued sparking results. The best cure | for this trouble is to have the commutator returned, or if the mica is very hard, it can be cut or sawn slightly below the level of the copper. Low bars may be due, either to mechanical | damage, or to some segments being softer than others. Flats often develop from low bars, or may be set up by causes external to the motor. Bad joints in belts are a very common cause; pulleys out of || balance, or badly cut gearing, are also usual. Motors having regular overloads of short duration, such as flat bed printing machines driven by plain shunt motors, are another prolific source of flats. Sometimes commutators are found to | be marked regularly all round, often in groups of three segments, one segment being bright, the next one dull, the third one being nearly black. This marking need cause no concern, it indicates that there are three coils | in every armature slot. Sparking due to overload can easily be recognised, being accompanied by heating up of the windings, and a reduction of speed. An ammeter will show what the machine is taking; if one is | not available, the size and temperature of the fuse may be a guide, or if the starter be fitted with an overload release, this can be screwed

2

3

up until it just pulls in, the current being read approximately || on the scale. An open circuit will show as a green flash, arcing all round the commutator. When at rest, the fault can be located by the burnt edges of the segments on either side of the disconnection. | This fault must not be mistaken for a somewhat similar one, in which the spark is of a red or yellow colour. This is due to dirt collecting on a sticky commutator, and can be removed by persistent | cleaning. The stickiness appears to be due to the working out, when heated, of the varnish or shellac which binds the micanite together. The danger of this fault is that it may develop into something more serious, | namely, the eating away of the micanite between the segments. Unless this is checked, it will in time eat right down, and probably earth the commutator. Various compounds, such as shellac varnish, and plaster of paris, are || sometimes recommended as fillings.—*The Engineering Gazette.*

91. AUDITOR'S ACTION FOR FEES

PLAINTIFF told the trustees that he was not satisfied with the accounts as they stood, that he was not prepared to guarantee that the shareholders were properly safeguarded, and that before he signed another balance-sheet he would require | to be assured that the loans were absolutely good, and that they could be realised in a reasonable time. He wanted to convince himself that the assets were properly secured, that the cash in hand was immediately available, | and that the loan debtors were reliable people who could be depended upon to repay their loans; in fact, he wanted to undertake a comprehensive audit in order to place before the shareholders their exact position. He | told the trustees several times that the carrying out of such an audit would be a very expensive matter. He commenced the audit in January and did not complete it till the following April or May. He || found it necessary to engage an additional clerk to assist him in the work. He himself was engaged on the work for 141 hours, and he had charged the Society three guineas per day |

for his own time and one guinea per day for his clerk. It was a very lengthy business, and, in the course of his investigations, he had to send out about 1,000 letters and circulars to the shareholders. He experienced considerable difficulty in obtaining the information which he required. On the completion of the audit, he submitted a report to the Society. He also sent in his bill for sixty-five guineas. No complaint was made as to his charges. Since then he had written several times for payment, and had received thirty-five guineas. Subsequently, he received a letter from Mr. Strickland, the secretary of the Society, stating that the Board considered his (plaintiff's) charges "somewhat high," and asking whether he could see his way to reduce the account. He replied stating that, in order to avoid any bother, he would accept £20 in settlement, instead of £31. The money, however, was not sent, although he frequently asked for payment. He never received any letter from the Society stating that his charges were unreasonable and he never heard any complaints of the manner in which he conducted the investigation. On the contrary, he understood that the trustees were perfectly satisfied. 2

Replying to Mr. Morle, plaintiff said the extended audit which he was instructed to carry out was really an investigation to ascertain the financial basis and position of the Society. The members' capital was reduced, and the thing was placed on an entirely different footing.

Mr. Morle: Did you say anything to lead the trustees to infer that you would raise your fee from six guineas to sixty-five guineas?—Plaintiff: Yes; Dr. Corfield knew it. 3

I put it to you that there is no foundation at all for that suggestion?—I say there is.

Did you think that this little Society, which only made a profit of £100 in 1912, was going to pay you sixty, seventy or eighty guineas for an audit?—The Society is not formed for profit.

Do you suggest that on this occasion you did ten times more work than on the occasion of the previous audit?—Quite.

Was the previous audit a thorough one?—According to the fee paid. I certified that the balance-sheet was in accordance with the books produced to me. My charge for the extended audit was rather under than over.

His Honour: Why did you not arrange for an agreed fee for this work?—Witness: We did not quite realise the scope of the work. We knew that there would be a good deal more work than usual, but I thought I had sufficiently protected the Society when the plaintiff promised to be as reasonable as possible and not to overcharge the Society.

Supposing the plaintiff worked on these twenty days, as he says he did, do you say that three guineas a day is an excessive charge?—I do.

His Honour, in giving judgment, said he thought there had been a great want of discretion on the part of the Society. They were very indiscreet in not having obtained an estimate for this extended audit before the work was done. They were very indiscreet in not having previously come to terms with plaintiff. He had cut down his fees and offered to accept £20 in settlement. There had been ample time to settle. ||—*The Incorporated Accountants' Journal*.

92. TEA TRADE REVIEW

UNLESS for a brief time at the close of realisations for previous Indian season, the general level of prices obtainable was satisfactory to the growers. The increase in yields, except in Java, was nominal, and at the same time the volume of consumption at home and abroad made rapid headway. The consequence has been a market that gave, on the average of prices for all growths, rather a better price to the producer than has been obtainable for about twenty years. It may not be, owing to higher costs of working and the special expenditure arising from the war, that a greater profit has been realised than in 1913, though there is little doubt but that, had home conditions been normal, there would have been a further advance in the capital values of the majority

of the producing companies. Owing to the derangement of all trading || in shares and to the nominal character of many quotations for those in tea ventures, Mr. Geo. Seton has been unable to produce his usual tables; therefore, the selling value of the usual range of representative concerns cannot | be quoted. It is unlikely, however, taking them over all, that they have been adversely affected in regard to their profit-earning power.

The hopes of permanent prosperity for this class of trader seem doomed to be constantly disappointed. | The expectations of a revised level of fixed retail prices, which were raised by the advance in first costs of tea and margarine, were unfulfilled owing to a fall in the cost of the chief components of | the latter. A revised scale of prices has been forced by the addition of 3d. per lb. to the duty collected by the Crown. The trade have, like good citizens, patriotically accepted the position. The additional burdens || thrown 2 upon them as unpaid collectors of the nation's revenue have not satisfied their zeal for martyrdom, as some of them would appear to be making a free gift to their customers of 1d. or even more of | the added impost. Any change in the rate of duty is a matter of serious loss to the distributing section of the trade and leads to the repetition of the old prayer—"Let us alone. What pleasure can | we have to war"—with Chancellors? In 1890 Mr. Goschen, then Chancellor of the Exchequer, quite unexpectedly and needlessly reduced the rate of the tea duty from 6d. to 4d. per lb. It had stood | for no less than twenty-five years at the former rate without variation, and these years brought to the trade much profit and unworried days. The succeeding twenty-five years have seen no less than five changes in the rate. || A simple arith- 3 metical calculation shows that had the charge been uniform throughout at 6d. per lb. for these years the revenue from the tax till 31st December, 1914, would have been about | £158,000,000, whereas that actually collected at the varying rates yielded roughly £130,000,000. The difference of £28,000,000 will soon be made up by the higher rate now

current. | From 1865 to 1890 no one beyond a few fiscal faddists and some planters looking for larger dividends ever complained of the incidence of the tea duty ; in fact, few | of the consumers were conscious of the fact that they were paying it. The reduction of capital necessary for trading on a duty basis of 4d. instead of 6d. during ten years in no degree compensated traders || for the consequences of the changes in the succeeding fifteen years.

The great body of the citizens have continued to drink tea in increasing quantities. The more free and general circulation of money arising from certain features | of modern legislation has happily shown its effects more obviously on the teapot than on the beer barrel. A further temporary cause of the better circulation of money has been the large number of men embodied within | the kingdom for military service. Apart from the actual War Office requirements for tea for the troops it is probable that the billeting money paid out for so many men may have helped " to keep the teapot on | the hob " in many cottages. It is too early yet to trace any effect on consumption arising from the added 3d. per lb. of duty, but when this really comes to mean one penny extra on each quarter-pound || purchased there cannot fail to be some restriction in the demand.—*The Financial Times*.

93. JUDGMENT IN A RAILWAY APPEAL CASE.

THE special Acts under which the railway was constructed, although giving general powers to construct the railway, contain no precise descriptions of the works, or, in particular of this bridge, and the obligation of the Railway Company | to erect and maintain the bridge rests upon the general provisions of the Railways Clauses Consolidation Act, 1845. By section 46 of the Railways Clauses Consolidation Act, which is incorporated with the special Acts, | it is provided that " if the line of the railway cross "—here it is, amongst other things, " a public highway," which is this case—" then (except where otherwise provided by the special Act) "—and there

is no provision | to the contrary here—"either such road shall be carried over the railway, or the railway shall be carried over such road"—and here the road is carried over the railway—"by means of a bridge, of || the height and width and with the ascent or descent by this or the special Act in that behalf provided; and such bridge, with the immediate approaches, and all other necessary works connected therewith, shall be executed and | at all times thereafter maintained at the expense of the Company." There is no dispute, with regard to these specific matters that the Railways Clauses Act deals with, that is the dimensions, the height and width of the | bridge and the gradients of the inclines which are provided for by statute, that the bridge complies with the statutory requirements.

Now it will be observed there that the obligation is, that where the road is carried | over the railway by means of a bridge, such bridge is at all times thereafter to be maintained at the expense of the company. That is the section which imposes upon the Railway Company the obligation of || 2 maintaining "such bridge," that is, the bridge which they are required to construct. Section 66 of the same Act provides: "That in case any difference in regard to the construction, alteration, or restoration of any road or bridge, | or other public works of an engineering nature required by the provisions of this or the special Act shall arise between the Company and any trustees, commissioners, surveyors, or other persons having the control of or being authorised | by law to enforce the construction of such road, bridge, or works, it shall be lawful for either party, after giving fourteen days' notice in writing of their intention so to do to the other party, to apply | to the Board of Trade to decide upon the proper manner of constructing, altering or restoring such road, bridge, or other work; and it shall be lawful for the Board of Trade"—reading it shortly, the Board || of Trade may 3 determine the matter. In the present case there was no application to the Board of Trade, that is to say, it does not appear that the Highway Authorities raised any objection to

the construction of the | bridges which the Railway Company were proposing to erect.

Now the bridge was erected and completed, the line opened for traffic, and it has existed now for nearly fifty years—for forty-eight years. I think at this distance | of time it must certainly now be taken that the bridge which the Railway Company built was a compliance with their statutory obligation to build the bridge. The road was carried over the railway by means | of a bridge, and the obligation of the Railway Company to build the bridge—to construct it in the first instance—was duly complied with. Then what is it they are to maintain? Section 46 is the || maintenance section, and they are to maintain “such bridge.” It is quite impossible to read section 46, in my judgment, as imposing upon the Railway Company any further obligation than this, to maintain in good repair and condition the | works which under the statute they were bound to construct. It does not impose upon them any further obligation. It does not impose upon them any obligation to improve and strengthen that bridge, and it may be if | circumstances necessitated it, it might involve rebuilding the bridge in order to carry increased traffic which might come upon the road. There is nothing in the statute to impose any obligation upon the Railway Company other than | to maintain the works, the bridge, including its approaches, which they were under obligation to maintain. The standard by which the obligation should be judged is neither the ordinary traffic when the canal was constructed nor || the ordinary traffic of to-day.—*The Railway News*. 5

94. THE FASCINATION OF SWITZERLAND

SOME of our readers have, we hope, felt something of the fascination of Holland, of which we read in November. This month we are called on to interest ourselves in a very different country. Switzerland has been called | “the playground of Europe” because its wonderful and varied scenery has long attracted crowds of holiday-makers every summer

to climb its mountains, to admire its wonderful flowers, to enjoy the beauty and the climate of its lakes and valleys. Besides these pleasures it has lately given us those of a winter resort also, for, though it is much colder than England, the air is so much drier that it is possible to spend many more hours daily in the open air than we can here. Many parts are therefore recommended by doctors for reasons of health, and it has also become the favourite place for winter sport of all kinds. Men who wished to become good skaters have long been in the habit of going to Switzerland to practise their art; while now ski-ing, tobogganing, with other like games, engage people in healthy exercise by day, and the hotel-keepers see to it that they are prevented from dullness in the evenings by arranging for dancing and all kinds of amusements.

Travellers of this kind are not likely to study the history of Switzerland very seriously; our book tells us something of this, however, and of the present government of the country, which will explain some of the conditions we may look for. It is strange to consider the character of the Swiss, and the long time in which they have held together as a nation, when we think how they are made up of three races—German, French and Italian—speaking the language of these countries, and much resembling the inhabitants of that one to which they are nearest.

A careful study of the map will best help us to follow up the hints given in our book, and will also suggest to us the various kinds of "fascination" to be found in Switzerland. First, we shall probably turn to the mountains—those "peaks of eternal snow," of which we have so often heard. It is hard to realise that the cold which caps the mountains with ice and snow is largely a question of height. If they could be levelled, the climate would be the same as that of the plains from which they rise. The accounts of our brave airmen of the wonderful heights to which they attain tell us of the bitter cold, growing more intense every few yards. Long ago most people regarded high mountains with fear and horror, and only

the necessity for finding room and food for || their cattle led men gradually to higher and higher levels, when it became known that good pastures were to be found in sheltered spots at great heights. Then the love of scenery and of adventure led a few | people to climb and to explore, till some of the topmost peaks have been reached, and the delights of overcoming hardships and difficulties lead men to new feats of this kind. Here, as elsewhere, the pioneers had the | worst to face. Alpine-climbing has been made easier than it used to be by the establishment of the huts described in our book ; in fact, it has become practicable for ordinary men and women with the | help of guides, to climb, at any rate, the lower heights, and to gain the pleasure of seeing the sunrise among the Alps and the magnificent views from them.

The difficulty of going from place to place || has taught 4 the Swiss road-making and engineering, and they excel in both. Some of the most wonderful rail- and carriage-roads cross the Alps in every direction, by passes leading to the countries all round them. The making | of these roads is one of the chief industries of the Swiss, and they also work hard at agriculture, for the hills do not leave much space for cultivated fields, and they have to make the most of | every bit of tolerably flat ground. Besides these industries the Swiss have always undertaken certain work for other nations. In old days, they were frequently to be found fighting the battles of other countries, and even now the | Pope has a regiment of them always in attendance on him at the Vatican—the famous “Swiss Guard.” The French name for a pastry-cook or confectioner, shows their skill in that line, and they are now well || known in every branch of the great industry 5 of hotel-keeping.—*The Home-Reading Magazine.*

95. THE USE OF LEAD PAINTS

SOME four years ago the Home Office appointed two committees to investigate the danger attendant on the use of paints containing lead to the health of persons engaged in that work. One committee was to deal with house | painting,

and the other with the painting of vehicles. Recently the report has been published of the committee which has dealt with house painting, and from the voluminous evidence submitted one may, perhaps, gain some idea of the arguments for and against which will be revealed by the other committee, whilst, at the same time, one may be able to foretell, in some small degree, whether the use of lead paints will be prohibited or restricted in use. From the statistical point of view it is pointed out that 427 house painters have died from lead poisoning in fourteen years out of an estimated total number employed of || 150,000. The fatalities exceed the total of all deaths from lead poisoning among factory operatives, even including workers engaged in the manufacture of white lead, pottery, lead smelting, and similar industries. In addition, it must be remembered that there are a very large number of non-fatal cases to consider, estimated at ten times the sum of the fatal attacks. As far as percentages go, the manufacture of white lead itself is the most dangerous occupation considered within the scope of the inquiry, while the percentage given for "coach-building" is only a trifle better than for house-painting; but, no doubt, more figures will be available when the second report is published. The question naturally arises as to how far the use of lead paints may be made innocuous if reasonable preventive measures are adopted. However elaborate the sanitary precautions taken by the employer, he cannot force || his men to obey them. The report has much to say regarding dry rubbing down. This is a process which is seldom used in the carriage-building trade now, if at all. It may still be used by some firms during the painting processes of an under-carriage, but it may be stated emphatically that there is no need for it. The use of leadless paints forms, perhaps, the most interesting part of the report, as evidence is furnished both by the user and the manufacturer. Painters differ in opinion as to the merits of these paints, but on the whole we think we may draw the conclusion that leadless pigments are more useful than many are led to suppose, and the greater the number of firms

which conscientiously test them, the sooner will the perfect non-poisonous paint be produced, and any alleged defects removed. It would appear that there is no lack of makers and suppliers of the kind of paint which would naturally be asked for, and it is well known that many leading firms making motor bodies have eliminated lead as far as possible from the paint shop, and after initial prejudices have been overcome, the standard of work turned out bears comparison with that done in the old-fashioned way. The report reveals the fact that foreign Governments are fully aware of the danger of the use of lead paints. At the beginning of this year a law came into force in France prohibiting the use of white lead in all painting operations on buildings, whether on the exterior or not. In Belgium dry white lead must not be sold or transported, and dry scraping and pumice stoning are forbidden, and a similar enactment is in force in Switzerland and Germany, while in Austria white lead may be used under certain specified conditions. One cannot go so far as to say that white lead substitutes are, on the whole, far superior to the paints now used for all purposes of carriage painting, but the difficulty is so great in educating the workmen to use proper precautions and adopt cleanly habits, that the only way to quickly reduce the number of cases of lead poisoning is to prohibit, or largely restrict, the use of the material. Both employers and workmen would, we think, prefer the use of lead to be practically prohibited, rather than make more rules and regulations for its use, and increase inspection and other means of irritation. If white lead cannot be used for painting then all firms are placed on the same level, and the careless workman is protected from himself, while the employer is able to run his factory with less anxiety, and with no increase in the cost of upkeep.—*The Automobile and Carriage Builder's Journal.*

96. BUTTERFLY MIMICS

Of all the problems which perplex the naturalist and biologist none has been more tantalising or more provoking than the

theory of mimicry in butterflies. The facts are striking enough, and an elaborate structure of plausible and ingenious theory has been built upon them. Yet few men of science, few intelligent observers of nature, have been willing to accept all the theory except as an hypothesis and with considerable reservation. The difficulties are obvious, and have been sufficient to compel misgiving.

Briefly, the indubitable facts are that there are in various parts of the world numbers of butterflies which, without visible modification of their internal structure, have in external appearance abandoned the normal scheme of colouring and pattern which belongs to them and have assumed a totally different scheme which is a more or less accurate copy of that of other butterflies of widely different types. There has been ground for believing that the butterflies which did this (the mimics) were always of kinds which were good to eat, while those whose appearance they simulated (the models) were, on the contrary, unpalatable. It is evident that an eatable species would be immensely benefited if it could delude the birds, or other creatures which naturally preyed upon it, into thinking that it was uneatable. Finally, this mimicry is not generally practised by both sexes but only by the females, the sex which, as longevity in the female is more essential to the continuance of the species than is longevity in the male, nature is commonly especially solicitous to protect.

Since Bates found in the Amazon region, the first reported case of mimicry, Wallace and a score of others have adduced new facts and new arguments in support of the theory based (on orthodox "Darwinian" lines) on the facts stated above, and difficulties have been explained away with, at times, an almost fantastic ingenuity. But great and evident difficulties remain. Conspicuously there is the initial difficulty of explaining how this extraordinary process of approximation of one species to another has come about. If it has been by the ordinary operation of natural selection of the Darwinian kind, it must have been very gradual. Why do we find none

(as we practically do find none) of the intermediate stages? And why does not breeding, whether in nature or in captivity, of the males of the normal type with the aberrant females ever produce (as it practically never does produce) examples of these intermediate stages? | Again, we know very little about the visual powers of birds or any of the lower animals. In the early stages of the slow process of approximation the difference in variation from the normal type must at || first 3 have been infinitesimally small. Apparently we must assume that even then the birds, or other enemies, saw this minute divergence from the normal type, which could only be the case if they possessed extreme acuity of vision. | But the final approximation is never an exact copy; and if the birds, or other enemies, are indeed deceived, they must be very far from keen-sighted.

As a matter of fact, there is much evidence to show | that, while the colour vision of birds probably differs widely from ours, they can be, at least in matters where their food is concerned, very discriminating indeed. In England it has often been observed that birds which | will not eat white butterflies will immediately give chase to the large whitish swallow-tailed moth, if the latter be so indiscreet as to fly abroad in the daytime, though it takes a trained human eye to || tell the moth from a butterfly. A hundred other things 4 go to show that it is most improbable that the birds would be taken in by the not too exact resemblance of mimic to model, nor would the | other chief enemies of the tropical insects, the arboreal lizards and monkeys. Nor is it at all certain that many of the models are any more uneatable than the mimics; neither is it among the families of butterflies | which are most pursued by birds that the tendency to mimicry appears. The whole matter, indeed, is beset and clouded with doubts and contradictory evidence.

If the Mendelian doctrines are true, and species are not the result | of natural selection working on infinitesimally small variations, but spring suddenly, Minerva-like, from the normal type, we get away from the difficulty of the gradual process

of approximation. This is a fact of equal importance both to || Mendelism and to mimicry.—*The Times*.

5

97. THE COLONISATION OF AUSTRALIA

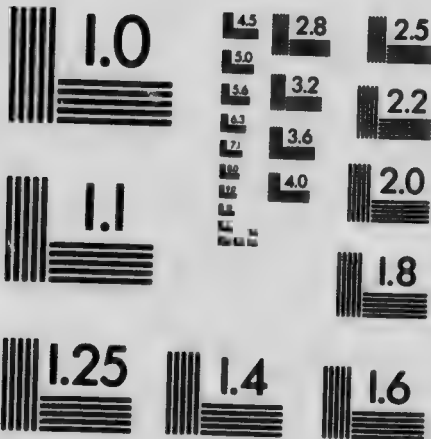
COLONIAL self-government in loyal but free co-operation with the Empire and the parent State, was also the ulterior idea of Wakefield's doctrine of colonisation. In whatever degree the Durham Report was influenced or inspired by Wakefield we may | be sure that it was in that direction that his influence was exercised.

Wakefield's aim was so to organise colonisation as to make it a "paying proposition," "paying," that is, not merely in the narrow financial sense, but | in the much larger and nobler sense of building up a stable, orderly, and progressive community in the colony affected, to the equal and common advantage of the mother country on the one part and of the colony | on the other. The materials which he had to work with were land and labour—land in the colonies of practically unlimited extent, and surplus labour in the mother country only waiting for the opportunity and the || means to relieve the congestion of population at home by migrating to the external dominions of the Crown where labour was in constant demand. The King was to bring these two factors into organic relation and profitable co-ordination. | Wilmot Horton had failed with his system of pauper emigration to Canada financed from the mother country. There was no adequate combination between land and labour, and though the congestion of population was in some measure relieved yet | the cost of the relief was found to outweigh the advantage. New South Wales was founded on convict labour, and perhaps could have been founded at the time in no other way ; but convict labour was manifestly | no adequate moral basis for a progressive and self-respecting community. The Swan River Colony had been founded on the basis of free grants of land to be cultivated by free labour ; in its early days it || 2 had proved a failure for more than one reason, but chiefly



MICROCOPY RESOLUTION TEST CHART

(ANSI and ISO TEST CHART No. 2)



APPLIED IMAGE Inc

1653 East Main Street
Rochester, New York 14609 USA
(716) 482 - 0300 - Phone
(716) 288 - 5989 - Fax

because the system of free grants of land was found to be incompatible with an adequate supply of labour to cultivate the land. Wakefield's remedy for this | state of things was to allow no free grants of land at all but to put a price on any land sold sufficient to prevent labourers from becoming land-owners until they had, so to speak, earned their freedom | to buy land of their own by working on other men's land to begin with. The whole theory is briefly summarised by Mr. Mills, as follows—

"A sufficient price on land would prevent labourers in the colony from | becoming landowners too soon. This would ensure a supply of combinable labour because capitalists might then with safety import labourers under agreement. Thus the colony would prosper to her own great benefit, and to the advantage of || the mother country, which would be relieved of her surplus population and afforded a new and extending market." 3

The sole purpose of this sufficient price was—in Wakefield's view but not always in the system as it was | worked out in practice—to prevent the premature purchase of land by labourers needed for the cultivation of land already purchased by others. The resulting funds were, as it were, a by-product of an automatic process of combining | land and labour to greatest advantage. But Wakefield pointed out further that the best way of employing this by-product was to use it for the purpose of promoting immigration into the colony. Thus the whole process would | be accelerated.

"The sufficient price would produce revenue which, best applied to emigration, would introduce labour into a colony. With the consequent extension of industry, capital would be accumulated, and more land bought by capitalists and by || labourers who had completed their term of service. These new land sales would yield money for fresh emigration and the process would begin again." 4

Such in briefest outline is the capital contribution made by Gibbon Wakefield to the | political thought of the Empire. For its full elucidation and the history of its application in

practice we must refer to Mr. Mills's well-studied and well-written volume. If there were many more monographs of this calibre we should hear less than we do of Sir John Seeley's now hackneyed epigram that the English nation had "conquered and peopled half the world in a fit of absence of mind." It is only true in a limited and partial sense—true enough, that is, for an epigram, but by no means true enough for a reasoned interpretation of history. If it expresses the truth, then the modern history of Australia would have taken a very different course from that which it has taken. 5
—*The Times.*

SECTION IX

160 WORDS PER MINUTE

98. MEETING OF A SHIPPING COMPANY

WE have called you together to propose to you a very short and simple resolution, namely, "That the capital of the company be increased to £500,000 by the creation of 200,000 new shares of £1 each." Some shareholders, a few, have written to ask us why we want to increase the capital. Well, my answer is very simple. We do not want more money at present, but we may want it, and if we do we should like to be in a position to act quickly, and not to have to wait to give the requisite legal notice to call the shareholders together for the purpose of passing such a resolution. In order to reply to the question why we may want it, I must go a little into the present position of the shipping industry. You will probably be aware that 1913 was the best year, practically, that shipping had ever experienced. || It was a "boom" year. The beginning of this year was fairly good, but as the spring advanced trade slackened off, and we gradually got into very bad times. The depression increased, and on the eve of war it was only by good management that we could run our ships at a profit. Then war was declared, and trade, as you know, temporarily came to a practical standstill, and the shipping depression was worse than ever. In fact we made up our minds that the only thing to do was to bring our steamers home and lay them up in these waters. We started to do that, but owing to what I think I may call the brilliant financial policy of the Government—a policy brilliantly conceived and brilliantly carried out, and which has met with such wonderful success—the trade of the country almost at once began to recover and get back to a normal footing. At

least I || may say it has now become much more normal 2
than anybody could possibly have anticipated in such abnormal
times. Not only did trade, recovering in such a way, con-
tribute to the improvement in freights, but several other
things influenced the | position of shipping.

First, this country captured a large number of German
steamers, which, of course, had been competing with us. In
the next place, practically the whole of the rest of the German
mercantile marine fled into neutral ports, | and is still laid up
there. Then the Government began to requisition steamers
for the transport of troops and for coaling cruisers all over the
world, and I may tell you that they have requisitioned two of
our steamers. | We do not know where they are, when we
shall see them again, or what we shall be paid for them, but we
hope we shall not lose money anyhow. I believe the Govern-
ment has taken 1,200 or 1,500 || steamers off the market, 3
and, in addition, there are the vessels which the *Emden* and
the other German cruisers have sunk. Now, the outcome of
these three or four factors has been a shortage of ships,
which has gradually | put us back into a position which I can
only call a shipping "boom." Freights are at present very
good indeed. It may be asked if we propose in these circum-
stances placing contracts for new steamers. If you con-
tracted for | a steamer at the present time you would have to
pay a very high price, and you would not get delivery of the
vessel for twelve or eighteen months, or possibly two years.
I do not think that is good | enough. We do not know how
long the war will last, and there are many things we cannot
calculate in the position. If, however, we could buy some
cheap steamers "on the rail" we might be tempted to do so, || 4
because we should then get the benefit of the high freights
which can now be obtained. There is the possibility that if
you tried at the present time to buy such a boat you might
not succeed in doing so, | but the Government has all these
captured German steamers, which sooner or later will be put
up for auction. Some of them might suit us, but it might be
that we should not find among them just what we require. |

Still, if a large number of boats were put up for auction they might go fairly cheap, and it might have the effect of causing other steamers to be sold cheap, and then we might get our chance of securing a bargain. That is what we ask for power to raise this additional capital.

Before I sit down you would, no doubt, like me to say a few words regarding the company's position. As I have already told you, at the commencement of the year we started fairly well, but afterwards times became bad.—*The Times*. 5

99. THE ECONOMICS OF OIL FUEL

In its crude state, coal can only be utilised for steam-raising purposes in a furnace. Moreover, crude coal is a bulky commodity, difficult both to stow and to handle on board ship even under favourable conditions. But conditions are not always favourable, and it is necessary to have easy access to the coal, and facilities for handling it, whatever may be the circumstances of the moment, either at sea or in port. Consequently the bunker space in a steamer has not only to be in close proximity to the boilers, but in order to facilitate trimming and stoking, space that would otherwise be valuable for cargo-carrying purposes has to be sacrificed. The coal bunkers of the average steamer occupy what would be some of the best cargo space in the vessel. A steamer of medium tonnage, consuming about 60 tons of coal a day, in making the voyage from Europe to Australia, with only one bunkering port en route, must ordinarily carry nearly 2,000 tons of coal. A ton of Welsh coal measures about 42 cubic feet, whilst coals of various qualities may measure anything between 42 and 52 cubic feet to the ton. Hence the space occupied by the bunkers is very considerable. In actual practice when coal is cheap and freights are low, a steamer on a long voyage will sacrifice freight space and carry as much coal as possible, but should freights rule high, then as little coal as possible will be carried in order to earn the utmost possible freight. A point like this requires more

5 experience to benefit by than appears at first sight. Comparatively small increases or decreases in freight rates and | the price of fuel may, under experienced management, make all the difference between a profitable or an unprofitable voyage, or between a very ordinary result and an exceptionally good one. A knowledge of the coal markets and the various qualities || and measurements of coal are as essential in the 2 successful management of steamers as is experience of the freight markets. In a sentence, the space occupied by coal, its nature and the difficulties attendant on its use, very considerably affect | both the cargo-carrying capacity, and the economic handling of a steamer. These facts cannot be too strongly emphasised at the present moment, when another fuel and other methods of propulsion are on their trial, with results already recorded which | warn the progressive shipowner that a new era in shipping has dawned.

Whilst coal can only be utilised in a furnace, oil offers alternative advantages. It can be used to raise steam in ordinary marine boilers, or it can be | so used that boilers may be dispensed with. Both these methods result in effecting economies as compared with coal consumption at present prices. Careful experiments prove that where oil is substituted for coal as the fuel to raise steam in || marine 3 boilers, 1 ton of oil will, on the average, do the work of $1\frac{1}{2}$ tons of coal. Here at once attention is arrested because even the tyro in shipping business will realise that one-third of the | bunker space is immediately economised, for oil occupies on an average about the same space as coal, viz., 40 to 46 cubic feet to the ton. But this is only the beginning, and by no means the greatest economy effected. | Coal requires not only greater space, but some of the best cargo space in the ship. Oil can be stored almost a ywhere so long as the receptacle is not leaky. Owing to this, oil fuel can be pumped into any | out-of-the-way part of the ship, and spaces which could not be utilised for freight-earning purposes are rendered valuable in that they may contain the oil, and so set free more eligible spaces for freight-earning purposes. || Oil may even be 4

carried in the ballast tanks, and thus almost every cubic foot of space in a cargo steamer may be made productive. From this it can be seen that the use of oil fuel results in a considerable gain of space, but the advantages go further yet. The transport, handling, storing and stowing of the oil cost less, and less labour is required in the stokehold. About one-third of the firemen may be dispensed with when oil is substituted for coal, and no trimmers need be carried, for oil trims itself. Fewer men require less accommodation and consume less food, hence wages and food bills are reduced; and the space which the extra hands required may be used either to improve the living quarters of the staff, or to carry more cargo, or perhaps both these may be effected. An experiment was tried on two of the Canadian Pacific Company's steamers some months back, which resulted in proving that the substitution of oil for coal in a steamer of about 4,000 tons, fitted with ordinary reciprocating engines, results in the saving of over £30 a day.—*History and Economics of Transport.* 5

100. CARRIAGE OF OIL

THE applicants carry on business in Scotland and England in the sale of petroleum, burning and lubricating oils, benzine, and motor and fuel oils. They have an oil store and distributing depot at Grangemouth, from which they send large quantities of goods by respondents' railways, and pay the respondents £20,000 a year in rates. They said that it recently came to their knowledge that these railway companies carried similar traffic for other traders in Scotland at much lower rates than they charged the applicants. In particular, they so carried for the Scottish oil companies their finished and unfinished products, which included lubricating and burning oils, benzine, and motor spirit, at a fixed mileage rate per ton. That mileage rate was much less for any given distance than the rates charged to the applicants. The latter believed that the railway companies had agreements with all the Scottish oil companies, under which they carried the

products of their works at special or reduced rates. Each of these oil companies competed with the applicants in the sale of their goods. Applicants wrote to the railway companies complaining of the preference, | and stating that their business was handicapped by such high rates as were being charged to them, but the railway companies declined to give relief. Applicants claimed as damages in respect of the excessive rates paid by them since 1907 | the sum of £36,000 against the Caledonian Railway Company and the sum of £9,200 against the North British Railway Company. They asked an order on the railway companies to desist | from giving any undue preference to other traders and directing an inquiry into the damages sustained by the applicants.

5 The Caledonian Railway Company, in their answers, denied that they had any current agreement with the Scottish oil companies in terms || of which their traffic was carried at reduced rates. They also denied the other material allegations made in the application, and disputed the applicants' claim to damages. The applicants, they said, did not suffer any undue prejudice by reason of | the rates in respect of the traffic of the Scottish oil companies, which differed materially from the traffic of the applicants. The rates in respect of the traffic of the Scottish oil companies were put in operation with the object | of securing the traffic in the interests of the public by establishing and developing a new industry and giving employment to large numbers of workmen. A lowering of the rates complained of would involve the respondents in serious loss. 2

In | their answers the North British Railway Company stated that the applicants were not prejudiced. The differences in rates complained of in the circumstances and in view of the terms of the agreements between the Scottish oil companies and the North || British Railway Company were just. 3 There was no real competition between the applicants and the Scottish oil companies. No manufacturing of any kind was carried on by the applicants. The traffic which the Scottish oil companies gave the North British | Company was more than

forty times as valuable as that which they received from the applicants.

The Court found that the unequal tolls, rates, and charges complained of by the applicants constituted and were a preference to traders other than the applicants which the respondents had failed to justify. The Court therefore required and ordained the respondents to desist from giving any such undue preference, and continued the cause.

Lord Mackenzie said it was not disputed that the rates charged by both the respondent companies to the applicants were in excess of those charged by them to the Scottish Oil Companies. In the case of burning and lubricating oils the difference ranked from 8 to 23 per cent.; in the case of naphtha, which included motor spirit, the difference ranged from 123 to 181 per cent. In the case of returned empties the difference was between 31 and 109 per cent. The answer of the respondents that this difference in treatment constituted an undue preference was (1) that having regard to the origin, history, and conditions of the traffic in burning and lubricating oils, the difference in rate charged to the Scottish oil companies, who were manufacturers, and the applicants, who were merchants, amounting on an average to 25 per cent., was justified, and (2) that as regarded the new industry in motor spirit there was no competition between the applicants and the Scottish oil companies, and therefore no ground of complaint. The respondents said that as between manufacturers and merchant there never had been equality of charge during the sixty years that the Scottish oil industry had been in existence. ||—*The Freighters' Journal*.

101. A PRIZE APPEAL

LORD PARKER, in delivering their Lordships' judgment, said: This appeal relates to the cargo *ex* the steamship *Roumanian*, a British vessel. On 4th August, 1914, the day on which war broke out between this country and Germany, she was on a voyage from Port Arthur (Texas) to Hamburg with petroleum belonging to a German company. On the

same day the Admiralty, through the Secretary of Lloyd's, suggested to the owners that the ship should be diverted to some port in the United Kingdom, and the owners accordingly instructed the master to go to Dartmouth for orders. The ship arrived at Dartmouth on 14th August, 1914.

On 15th August the Board of Trade issued a notice containing recommendations with regard to the treatment of cargoes belonging to an enemy in ships diverted from their original ports of destination. These recommendations appear to their Lordships to be so conceived as to prejudice in no way the liability (if any) of such cargoes to be seized as prize. It was recommended that the cargo should be landed at a dock, legal quay, or sufferance wharf, either in the port at which the steamer had arrived or in some other safe port, and warehoused subject to shipowners' and other charges until sale or disposal could be arranged for. If sold, the proceeds should be held for subsequent distribution to those entitled to the cargo, subject to shipowners' and other charges which might at law have priority to the claims of the persons entitled to the cargo or its proceeds. Obviously, if the cargo were liable to seizure as prize, seizure followed by condemnation in the Prize Court would entitle the Crown either to the cargo itself or the proceeds thereof, subject to such shipowners' or other charges as might, by law, take precedence of the Crown's interest.

On 20th August the *Roumanian* proceeded to London, arriving at Purfleet at noon on 21st August. Before her arrival arrangements had been made to warehouse the petroleum in the tanks of the British Petroleum Company (Limited), and permission had been obtained from the Custom House authorities for its discharge into these tanks. When so discharged the petroleum would be in the custody of the Custom House authorities in the sense that it could not be removed without their sanction. The work of discharge accordingly began at 12.15 p.m. on 21st August, the petroleum being pumped into the tanks, which were situated some 100 to 150 yards from the wharf.

About 7 p.m. on 22nd August a letter from the Custom House at Gravesend was delivered on board the *Roumanian*, addressed to the master, stating that the cargo of petroleum was placed under detention. This letter was not received by the master till 11 p.m. Roughly speaking, about 1,000 tons of oil remained undischarged at 7 p.m. and 600 tons at 11 p.m. on 22nd August. Notwithstanding the letter the work of discharging the oil continued. It was completed long before the writ in these proceedings, which did not issue until 19th September, was served by affixing it to the tanks in which the petroleum was then warehoused. 3

It will be observed that the letter giving notice of the detention of the cargo did not refer to its detention as prize, and it was argued on behalf of the appellants that there was no effectual seizure as prize until the writ was affixed to the tanks. It is clear, however, that the Custom House is the proper authority to seize or detain, with a view to its condemnation as prize, any enemy property found in a British port. It is equally clear that the letter was intended to operate, and must have been understood by all concerned as intended to operate, as such a seizure. No other possible intention was suggested. In these circumstances their Lordships are of opinion that the cargo was effectually seized as prize upon the delivery of the letter. The point, however, is of little importance in the view which their Lordships take of the points of law, for if there was no seizure by delivery of the letter, there was admittedly a good seizure when the writ was served. 4

In these circumstances three points were raised by counsel for the appellants. They contended—

First, that so far as the petroleum was not afloat at the date of seizure, the Prize Court had no jurisdiction ;

Secondly, that even if the Prize Court had jurisdiction, it ought not to have condemned the petroleum so far as at the date of seizure it was warehoused in the tanks of the British Petroleum Company, and no longer on board the *Roumanian* ; and,

Thirdly, that enemy goods in British ships at the 5

beginning of hostilities either never were or, at any rate, have long ceased to be liable to seizure at all.—*The Times*.

102. LORD ROBERTS

IN the early days of 1915 the nation was saddened by the death of its most famous soldier. Lord Roberts had reached a great age ; his work as a soldier had ended some years before, but the memory of what he had done remained in the hearts of his countrymen. No man has ever had a higher ideal of duty ; no man has ever been more faithful to his calling. Throughout a long and varied life, Lord Roberts had been his country's true servant ; he had fought her battles in many lands, and against many enemies, and now that his work was over, he was esteemed and honoured not only for his ability and personal bravery, but also for his unswerving devotion to truth and duty. Even in the midst of a terrible war, when trouble and suffering are everywhere to be seen, and when death is all around us, people forgot their private griefs in the face of a national sorrow, and the nation mourned as one the loss of a true hero and a good man.

We remember, doubtless, the circumstances of Lord Roberts's death. We know that he went to France to visit our Army in the trenches, and that, owing to the bad weather, he caught a chill and died very suddenly. There seems something very fitting in the place of his death, surrounded, as it were, by his beloved soldiers and within the sound of the firing line. He had led his brave men to victory in many fights against tyranny and oppression, and now that his fighting days were over, we may feel assured that he would have desired nothing better than to die in their company in the greatest fight of all.

We know little about the boyhood of Lord Roberts. He seems to have been designed for a soldier from his earliest days, and this is not surprising, as he came of a family of soldiers, and his father was a soldier in India at the time he was born. At school he was not remarkable for cleverness

or great ability, but he attracted attention because he was not afraid of hard work, but was painstaking and conscientious in everything that he did. He retained this characteristic throughout life. He left nothing to chance ; he spared himself no trouble or inconvenience ; he was careful in the smallest details ; he put his whole endeavour into everything that he did. This is a valuable lesson for young people. How often do we find that brilliance and cleverness at school lead to nothing ? They are almost valueless unless accompanied by strength of character and powers of application. The great men of the world have nearly all been hard and conscientious workers.

The name of Lord Roberts will always be associated with India. He was born there, and, although he came to England at an early age, he returned to India as soon as his education was finished, lived there for the greater part of his life, and made his great reputation as a soldier there. Our older readers should get his book, *Forty-one Years in India*, which is a most fascinating work, and throws many sidelights upon the modesty and innate nobility of his character.

The Great Mutiny was the turning point in Lord Roberts's career. You will find the chief incidents fully described in the book. At the close of this terribly critical period in the history of our Indian Empire, he had fought at Delhi, Lucknow, and Cawnpore ; he had made his name as a great soldier, and he had won the distinction most coveted by our soldiers—the Victoria Cross. From this time forward his career is one long record of promotion and success, culminating in his masterly conduct of the war in Afghanistan. A long period of peace followed, during which he held the highest positions in our Army, and then, when he had reached an age when he might have expected to retire, he was faced with the greatest task of his life—the South African War. He had just lost his only son, he was heart-broken and worn with years and grief, but, when the call of his country came, he answered it without questioning and went out to do his duty.

The success he achieved, and many other matters, you will

read for yourselves in the book. A life so full of adventure and incident cannot fail to be interesting in the highest degree, and there is no doubt that the book will be in great favour. There are just one or two points about Lord Roberts's life which we should consider. First, he was a great soldier. He had the gift of managing large numbers of men.— *The Home-Reading Magazine.* 5

103. THE ELECTRIC LOCOMOTIVE

THE first thing to be proved in any proposal for a change from steam to electric traction would be the ability of the latter to comply with traffic requirements, and for the purposes of this essay, these will be classified under three headings, namely, the suburban passenger service, the long-distance passenger traffic, and the fast and slow freight services.

So far as suburban passenger traffic is concerned, electricity has already had a fair chance of showing what it can do, and the fact of its extension to so many suburban lines throughout the country affords ample proof that its inauguration has been attended with success. The advantages of an electrically-operated suburban traffic are too well known to be gone into in much detail; but it may be stated that the principal justification for expenditure incurred in this respect is that line capacity can be greatly increased as a result of the introduction of short automatic block sections, the elimination of certain shunting operations, and the quickening up of others, and the rapid acceleration and deceleration at frequent stopping places en route. When we turn to long-distance express passenger traffic, however, we find that the conditions are altogether different. Here the great factor is speed, and in this connection the steam locomotive still retains the advantage, and its great elasticity enables higher speeds to be attained than has yet been found possible when electric traction is employed. With the rapid strides now being made in electrical engineering science, however, it is

surely not too much to hope that this difficulty will prove but temporary in its character, and that before long a motor will be designed capable of attaining speeds of | from 70 to 80 miles per hour with a reasonable load, which for all practical purposes can be taken as the maximum for steam locomotives.

Looking at the proposition from an economic point of view, we find that weight for || weight the first cost of the electric locomotive is about double that of steam ; but if electric locomotives were manufactured on a large scale, this figure would probably undergo considerable reduction. It must not be forgotten, also, that for the | same adhesive weight the electric locomotive may actually weigh 30 to 40 per cent. less than the steam locomotive owing to the whole of the weight being available for adhesion, and as electric repairs and renewals cost less, the net | result of the two classes of locomotives is somewhere about the same. While the passenger steam locomotive only runs an average of 27,000 miles per annum, however, spending 75 per cent. of its time out of active service, | the electric locomotive, which need only be in the shops for one month out of twelve, does not spend more than 50 per cent. of its time out of active service, thus enabling it to run at least 40,000 || miles per annum, or half 3 as much again as the steam locomotive. In this country, also, the cost of operation is practically the same whether steam or electric traction is employed, and in countries like Italy, where coal is very | dear, considerable economies would result from electrical operation owing to the fact that the coal consumed in producing electricity at a large modern generating station is less than half of what would be used by a steam locomotive in carrying | out the same amount of work.

We now come to the question of electric traction as applied to the haulage of freight traffic, and it is here that the best prospect of carrying out economies is afforded. In the first | place, the limitations imposed by gauge considerations are practically non-existent where electricity is concerned, hence more powerful locomotives could be introduced capable of hauling heavier loads at increased rates of speed. This is

amply vouched for by American practice, where || the intro- 4
duction of electric traction has made it possible to double
the average daily mileage run by freight locomotives. Another
very great consideration is that electric locomotives waste
no energy when standing idle, whilst in the case of stationary
steam | locomotives there is a fuel consumption waste of
about 33 per cent. Greatly improved results are also met
with in maintenance and repairs, and not more than 10 per
cent. of the total electric locomotive stock need be tied up |
in the repair shops, as against 30 per cent. when steam
locomotives are employed. In regard to the questions of
pooling or double-crew working, also, preference must be
shown to electric locomotives, as owing to the fact that all
the | engines are worked on exactly the same principles, the
drivers can be changed about at will, whereas with steam
locomotives this practice cannot be resorted to without
involving principles of a most undesirable character. For
emergency requirements, also, the electric || locomotive can 5
be turned out at a moment's notice.—*The Railway News.*

104. CONTRACTS OF SERVICE BETWEEN EMPLOYERS AND EMPLOYÉS

I PREVIOUSLY dealt with this topic from the point of view of a
dissolution or termination of the contract for service between
master and workman by mutual consent or by effluxion of time,
but there are other modes of determining | the actual con-
tract itself at any moment, and with one of these particular
forms of termination I now propose to deal. Contracts—
and it must be remembered that the relationship of master
and servant is always based upon contract, either | expressed
or implied—may be vitiated by the happening of various cir-
cumstances. Thus a contract induced by fraud may be
determined at any time by the exercise of the option of the
party defrauded, but he must make his election | at the

time he discovers the fraud. A contract made under improper pressure is void, so is a contract made under a misapprehension of facts by both parties, and more particularly contracts opposed to moral conduct or public policy are || void and cannot be enforced. This latter class includes those contracts in restraint of trade which are so often found in the agreements for employment of travellers or business managers, whereby one of the parties binds himself after the determination | of the service, not to enter into a similar employment which may in any way enter into trade competition with the business carried on by the late employer, and I will here consider the various causes and effects operating to | decide whether and how far, if at all, such contracts are bad in law. A contract in general restraint of trade is bad *per se*, because trade must be for the benefit of the community generally, and therefore for the | country at large, so that each individual can live by the exercise of that particular trade or calling for which he may consider himself to be the best fitted. But if the restraint be only to abstain from exercising a || particular 2 trade in a particular locality or to refrain from dealing with particular persons, such as those who were in the habit of dealing with the master during the servant's period of service, then the position becomes somewhat different, and | one has to look at the various circumstances to enable any skilled lawyer to advise whether such restraint is binding or not. As a general rule, if the restraint be within reasonable limits as to locality or otherwise, the contract | is not bad, and the restraint can be enforced by injunction or order of the Court. What is reasonable or not, however, is always a question for the Court. In the case of *Dowden v. Pook*, decided by the Court | of Appeal, it was held that reasonableness of the restriction was always a question for the Court to decide. The most frequent form of contract of this description to be found in agreements for service is that the traveller or || 3 employé shall not, after the determination of his service, be employed in a similar capacity for any rival trader who might compete with the employer's trade. These agreements

are so lightly entered into by the out-of-work employé, that it is well to point out what the law is. One of the earliest cases which still guides the decisions of the courts to-day is a case of *Gosnell v. Price*. Gosnell and Price were hairdressers, and on a dissolution of partnership where Gosnell bought out Price, Price covenanted not to carry on a similar business in London or Westminster or within 600 miles thereof under a very substantial penalty of several hundreds of pounds. In an action by Gosnell's executors against Price for breach of this restriction, it was held that though the restraint was good as against trading in London or Westminster the 600 miles radius was too large and was unreasonable, and, therefore void. Thus it will be seen that the area to be excluded must be brought into consideration, and if a man be employed as manager of a shop in London it would be manifestly unfair to restrain him from trading all over England, though one might very well restrain him from trading in London or within a reasonable specified radius from the place where the old business was carried on. 4

In a case of *Pemberton v. Vaughan*, Vaughan covenanted not to open a shop for the sale and manufacture of ginger beer within a radius of one mile from the business which he sold to Pemberton, and the Court upheld the agreement, and found that the restricted area was within a reasonable distance and was not a restraint of trade over an unreasonable area. Of course, as to the area, very much would depend upon the general nature of the business, and also whether a wholesale or retail business was being carried on. ||—*The Miller*. 5

105. MUNICIPAL FINANCE

REFERENCE was next made to the effect of local government legislation on revenue and expenditure, and to the need for increased government aid and a better distribution of the burden of financial liability. Alderman Bowater said that

complaint was general | that practically all the rates were paid by the occupiers of rateable properties, and that sufficient variety had not been given to the means by which the revenue required by local authorities was raised. . It was felt that the financial | liabilities should be distributed amongst a larger number of contributory subjects and that all forms of property which benefited by the rates should contribute to the rates. One method suggested for spreading the burden on more shoulders was increased grants | from the National Exchequer. It might be true that to many ratepayers that meant money going out of one pocket as a taxpayer into the other pocket as a ratepayer, but its effect on local government would be very marked. || The Government already | gave about thirty millions—18 per cent. of the whole national revenue—to local authorities, but it was distributed upon no fixed principle, and it did not keep pace with the increased cost of the fresh duties, | national and otherwise, imposed by the Government. Indeed, the whole business was chaotic, and no one understood it. If the Government bore one-half of the cost of those national services, such as education, police, and administration of justice, the City | would receive £200,000 more per annum and could reduce the City's rates by 1s. 1d. in the £.

As an illustration of the effect of Government legislation during the last five or six years, Alderman Bowater | pointed out that the Corporation had actually been deprived of income of £33,000 per annum by the Licensing Act, increased income tax, diversion of motor licence duties, National Insurance Act charges, etc., the whole being equivalent to a || rate of 2d. in the £. It was probable that in the near future they would see a definite principle established by the Government when making grants for local services. Reference was made to the tendency to make Government grants | conditional upon the local authority maintaining the services aided at a definite standard, or, in other words, to ensure a national minimum of local efficiency. For instance, the police administration of the City cost about £150,000 | per

annum and the Government made a grant of exactly one-half of the cost of police pay and clothing of £117,000 per annum, forming part of that expenditure. The grant was not one-half the whole | police expenditure, but one-half pay and clothing, and a definite standard of police service was insisted upon by the Government before they made that grant. There were precedents in existence where the Government had stopped the grants for unsatisfactory service, || and in one case they threatened to do so because a local police station which was thought necessary by the Home Office was not built. The same applied to education. The Board of Education insisted upon certain work being carried | out before they made certain grants, but in this case, towards a total expenditure of £726,000 per annum, the Government contributed £329,000, which was about £34,000 short of | one-half.

In addition to those grants there were sums received by the Corporation from the Government which were known as Exchequer contributions, but these grants had no definite relationship with the promiscuous services of the Corporation which they were intended | to aid. In the same way the Government grant towards the cost of Poor-Law services in Birmingham was only £51,000 towards £343,000. The grants were practically fixed, and had been for many years, || but the expenditure was growing. In the case of Poor-Law Unions one might almost say that it was a fact that the better the Poor-Law Service the worse the Government aid, for the Union which spent least received proportionately the | largest Government grant. As an indication of the necessity for a revision of the whole basis of Government grants to municipal authorities he instanced the fact that since the grants were originally established in their present form in 1888 | no fewer than 118 Acts of Parliament had been passed which had imposed burdens, large or small, on local authorities. Nearly the whole of those had added to the expenditure of such authorities, and as a natural consequence | had led to increased rates, while the amount paid to Birmingham by the Government had been reduced £33,000 per annum.

Alderman Bowater concluded by referring to another source of the Council's income, namely, profits from the trading departments. ||—*Municipal Journal*.

5

106. JUDGMENT ON FLOUR CONTRACTS

MR. JUSTICE BAILHACHE, in delivering judgment, observed that the defendants claimed to be entitled to cancel the contract, but offered to perform it at an increased price of 3s. per sack. That offer the plaintiffs refused to accept, but | were willing to pay a slight increase to cover extra cost of insurance and things of that sort, but not willing to pay the rise of 3s. per sack asked for. Thereupon the defendants insisted upon the right to | cancel the contract, and it was in respect of that right to cancel that this action was brought. The question to be determined was whether on the admitted facts the defendants had brought themselves within the clause in the contract | upon which they relied. The clause was not one which required that the events mentioned in it and the failure to deliver the flour should be in the relationship of cause and effect, as was the case under the preceding || clause ! of the contract, which was a dilatory clause. The clause upon which defendants relied was one which obviously came into operation even though the prohibition of export did not prevent the sellers from delivering flour. They had only to | show that there was a prohibition of export preventing the shipment of wheat to this country. It had been contended by the plaintiffs that the defendants did not bring themselves within the clause unless there was an absolute prevention of | shipment of wheat from the causes mentioned in the clause. On the other hand, it was admitted by Sir Robert Finlay that the defendants would not come within the clause if the prevention was a very slight one, as, for | instance, the prevention of shipment of wheat in one ship owing to a war between Spain and a South American State. His Lordship thought that the clause came into operation when there was a prevention which was not absolute and || total, but which 2

5 was of such an extent that a considerable source of supply of wheat was shut up by prohibition ; or where a source of supply was shut up and thus caused a considerable rise in the price of wheat in this country. He thought that there was a prevention within the meaning of the clause if either of these tests applied. The evidence was to the effect that, owing to the prohibition of export, there was a considerable rise in the price of wheat—5s. per qr—between 27th July and 12th August. That constituted a prevention within the meaning of the clause. If he turned to the other test he found that one of the countries from which the export of wheat was prohibited was Russia. That was a considerable source of supply, although not the most important source. Mr. Gordor Hewart had been compelled to argue that the clause did no operate unless the prevention of shipment of wheat to this country was an absolute prevention. There were, however, considerable objections to construing the clause in that way. In the first place the clause did not say “preventing shipment or delivery of all wheat to this country.” If he read the clause in that way he might as well strike the clause out of the contract altogether, because it was very difficult to imagine a course of events under which there would be a total prevention of shipment of wheat to this country. The words “prohibition of exports” must be construed according to the ordinary canons of construction. It was impossible to suppose that all the countries of the world would prohibit at one and the same time the export of wheat to this country, except in the unlikely circumstance of this country being at war with the whole of the rest of the world. Therefore, he did not think that the words “prohibition of export” meant a prohibition of export of wheat from every country in the world. He thought the words meant a prohibition of export which shut up a substantial source of supply of wheat, and when he found prohibitions shutting up important sources of supply, such as Russia and Egypt, he thought the clause applied. If it had merely been a prohibition of 3 4 2

export of wheat from such countries as Switzerland or Tunis he would have come to a different conclusion. | The defendants had brought themselves within the protection of the clause, and there must be judgment for them, with costs on the High Court scale, as his Lordship understood this was a test case. It was contended that the contract | would be open to cancellation if one particular cargo of wheat was affected, which counsel suggested might happen in the event of a war between Spain and a South American State, the sight of a submarine belonging to Spain causing || the vessel 5 to put back.

107. MAINTENANCE OF PERMANENT WAY.

THIS is a question covering a large amount of detail work, each individual item being important in itself as representing a link in the chain of the railway permanent way, which, if not properly and efficiently maintained, in time throws | the whole fabric out of gear. It will be best, therefore, to consider the various items in their logical sequence as first constructed.

Hedges, or quick fences, as they are known by the permanent way staff, are gradually being discarded | owing to the heavy cost of maintenance. In numerous instances a post and rail fence has also to be supplied and maintained on account of holes in the hedge. Quick fences require cutting and trimming every autumn and weeds removed | from the roots. This is additional work which the platelayers have to perform, and the men would be better employed on the permanent way.

To ensure an efficient road, the bed and formation should be composed of solid and compact || material which will | afford easy drainage. In some cuttings the soil, not being of a sufficiently binding character, is continually falling down through the disintegrating action of wind and rain; consequently the platelayers are often engaged clearing soil and sand | off the road. Shrubs, rushes and grass are

encouraged to grow on the sides of cuttings and embankments, inasmuch as their roots help to bind the bank together and prevent slips. The worst formation for a railway is clay ; soil is a little better ; sand is not bad as it is heavy and yet affords easy drainage ; chalk and gravel both make a very good formation, they are fairly easy to work, and give an excellent drainage. Water gives more trouble in a cutting than on an embankment ; but a great deal depends on the nature of the formation.

5 It is a well-established fact that an efficient drainage is absolutely essential in the formation of a good permanent way. Water is the cause of a great proportion of the work which platelayers do, and, therefore, it is of paramount importance that the system of drainage should be kept in proper order. Drains are usually laid on either side of the line, in what is known as the "cess." In cuttings a drain is sometimes laid in the "six-foot" as well. Catch pits and manholes are provided at frequent intervals, and it is essential that the drains should be regularly cleaned out and kept in good working order. The formation of the "cess" is also a subject of importance, and has a great bearing on the efficient maintenance of the permanent way. In some districts an ordinary drain pipe is covered over with soil and the ballast. Elsewhere, large rough stone or slag is put down to allow water to drain through easily. In some cases an open "cess" acts as a drain. Whilst this latter system gives a free and rapid passage for water and the drain is easily kept clean, there are many objections to its general adoption. In the first place, unless there was plenty of space between the "four-foot" and the "cess" the men would have no safe place in which to stand, and there would be great risk of injury to them through falling into the open drain. When the road was being opened out, the drain would most likely get filled with ballast. Furthermore, there would be a tendency for the road to be pushed out and into the open "cess." In steep cuttings, instead of an ordinary pipe down which the water would rush in flood-time, and, perhaps, cause the drain

2

3

pipes under the road to burst, an open drain is made of blue bricks in the form of steep narrow steps, which break the force of the water and allow it to come down gently and steadily into the ordinary drains.

Ballast is the material in which the road is laid, and it plays a considerable part in the work of maintenance. Ballast should be clean, hard, and sufficiently bindable, yet loose enough to admit of free drainage. Stone or slag ballast should be crushed into cubes of from 1 to 3 in. diameter. On ordinary roads, where the formation is composed of soil or gravel, crushed stone or slag is very satisfactory. Where clay predominates, however, something is required to keep it down. It is remarkable how clay will work its way through slag and stone; but when one takes into consideration the sharp edges of stone and the weight of express trains pressing the ballast into the clay, it is hardly to be expected that the road will remain as it was laid. The arguments in favour of cinders, or ashes as they are more frequently called, are as follows: They are soft, elastic, and afford comfortable running, light and easy to work with, and very cheap.— *The Railway News.*

SECTION X

180 WORDS PER MINUTE

108. PRESIDENTIAL ADDRESS

THIS is our 27th annual meeting, and in accordance with the usual custom I have the privilege of submitting to you some observations on the recent work and progress of the Institute, and on general subjects of interest at present occupying our attention as financial officers in the service of local government. Being, as I am, a Scotsman, and comparatively inexperienced in English methods of local administration, I feel that the remarks which I have to offer in the following pages of this address may not be so interesting or so edifying as those made on similar occasions by my predecessor, and if there is shortcoming in this respect I trust that I shall not be judged too severely. I remember, at the same time, and I do so with pride, that a year ago I was your own unanimous choice. You paid my country a very graceful compliment, and conferred on myself an exceptional honour when you elected me to the office of President, and I record here with sincere gratitude my appreciation of that generous tribute.

You will gather from the report which is in your hands that the work of the Institute during the past year has proceeded along normal lines. Many subjects have, from time to time, occupied the attention of the Council; anxious and sustained consideration has been given to the more important topics; and some useful results have been attained. The central and other authorities have requested from us counsel and advice in the elucidation of financial questions connected with local legislation, and it is gratifying to know that the Institute thus exerts an enhanced influence, and continues to fill an important place in the sphere of local government.

In the light of the stringent qualifications which are necessary for ordinary membership of the Institute, I think the increase in our numbers during the past year will be considered | satisfactory.

We have again to regret losses by death in the ranks of our colleagues. These remind us that our Society grows in years, and that age must give place to youth, teaching us anew the salutary lesson to "work while it is day, for || the night 2 cometh when no man can work."

No more appropriate work could be undertaken by this Institute than the creation of models for the annual abstracts of accounts, and I am glad that the Council is in a position to submit to you to-day | for final approval standard forms of rate fund accounts. This stage has not been reached without prolonged and arduous labour on the part of both the special sub-committee which has dealt with the matter and the Executive Council. They recognised at once that this subject, | like art and kindred matters, is one about which much diversity of opinion may exist even among experts, and consequently they have bestowed much care and thought on the prints now before you, in the hope that while unanimity may not be possible on the | methods of stating details, the forms in their principal features may meet with your approval.

I remind you that in the sister country model forms have been prescribed by the central authorities for the accounts of the various local bodies, and that the published abstracts || 3 are consequently accepted for the purposes of the Local Taxation (Scotland) Returns. This is a goal towards which the Institute should now look (for England and Wales), and when that is reached it will be creditable to us and of advantage to all concerned.

In | the domestic affairs of the Institute one matter which, in my opinion, should command our whole-hearted attention, is the education and training of the municipal financial officer. If we cannot claim that his calling is a profession by itself, we can at all events | say that it has become a highly specialised and very distinctive branch of general accountancy and

finance. Just as local government has extended greatly within recent times, and is still expanding and bringing with it in almost every branch of its activity new responsibilities for the financial officer, so also is it calling to him for a higher standard of attainment, and for a greater effort towards the acquisition of expert skill and sound practical knowledge.

It is important also in the interest of municipal administration itself that there should be growing up from time to time a generation of highly trained and widely educated men, well qualified for the efficient performance of the special financial and other duties which are becoming more and more identified with that service. For this supply of expert officials the municipalities naturally look in the first instance to the financial offices where young municipal accountants are being trained for the practice of their profession. These practical training schools, however, are widely scattered; they vary much in size and complexion; their methods in this matter require guidance and control; practical work should be supplemented by theoretical study, and it is here where this Institute, as a central and representative body, has, in my opinion, a duty to perform towards itself and an obligation towards the profession, which I should like to refer to for a little.

The future of the Institute will rest largely upon the professional qualifications of its members; that they shall be men of competence and ability is to it of vital importance. One of the objects for which the Institute was established is, as stated in the memorandum of association, "To improve and elevate the technical and general knowledge of persons engaged in, or about to engage in, the profession of municipal treasurer and accountant," and in pursuit of this aim the Institute inaugurated ten years ago a system of examinations, which, so far as they go, have year by year yielded very satisfactory results.—*The Incorporated Accountants' Journal*.

109. SHIPPING CONGESTION

THE position in regard to the detention of vessels at Gravesend shows a marked improvement. The number of vessels waiting there to enter the docks was as high as forty-three a few weeks ago. It has gradually come down, and yesterday there were only six | such vessels. London has been more fortunate than Liverpool, where the number yesterday was forty-five.

As regards the disposal of cargoes, the position has also obviously improved, otherwise the gain in respect of vessels could not have been possible, but the visitor to the docks | will still see crowded quays and sheds, and there is yet much to accomplish before shipowners and merchants can depend upon normal despatch. The causes of the improvement are not to be found in decreased business. On the contrary, more and more business continues to | flow into the port. They are to be found in the stoppage of the abnormal arrivals of sugar which, owing to the special conditions of the trade, put a strain on the resources of the port quite out of proportion to its volume, in the || relaxation of Customs war regulations in favour of the Colonies, in economy in the use of lighters and carts, and in the general goodwill of all concerned to adapt the arrangements of the port to the novel circumstances. The labours of the Committee on Port | Congestion, under the chairmanship of Lord Inchcape, have materially contributed to ameliorate the situation.

At the moment, the principal problem is connected with the enormous quantities of wool which have been coming into the port since the beginning of January, and which are expected to | pour in until the beginning of July. The total number of bales to be dealt with in these six months is nearly 2,000,000, as many as ordinarily arrive during the whole year. In peace time, the wool discharged in London is dealt with in | three ways. Part is transhipped to Germany and other Continental countries. Part is forwarded direct by rail or sea to the manufacturing districts. The remainder is

kept in London for the public sales, and is delivered by the Wool Warehousekeepers (of whom the Port Authority **||** is **2** the chief) in accordance with the orders of the buyers. For the time being the direct Continental shipments have practically ceased. The direct consignments for the manufacturers still go on, but conveyance by the sea route is not practicable owing to the prohibitive insurance **|** rates, whilst the railways, which now have to undertake the carriage of all the wool for the North, are already hampered by war traffic, and, moreover, find difficulty in delivering at destination owing to the scarcity of horses and carts at Bradford. The same causes **|** also involve delays to wool sold in London at the public sales. The result is that wool which is usually out of the London Dock Warehouses within a few days of sale, has to be kept in stock and prevents the reception of wool for **|** following sales. Thus it is that large accumulations of wool are taking place at the lower Docks, and the Port Authority is compelled to use sheds and open spaces there and even timber sheds at the Surrey Dock **||** for intermediate storage which is entirely unnecessary **||** in the usual course of things, necessitating **3** double expense in handling and lighterage, and consequently higher charges on the trade. The remedy does not lie in London, as we can deliver far faster than the receivers can take. With the urgent requirements for wool **|** for Army purposes, it is somewhat surprising that the serious attention of the War Office has not been directed to this question. So far as we can judge in London, it would appear that the remedy is to be found in improving the traction **|** facilities at Bradford and in enlarging the terminal storage sheds there in the same way as the Port Authority is increasing its shed accommodation at the London Docks. The incident of last week, when a Yorkshire factor sent motor-lorries to London to fetch his wool, **|** shows where the trouble is and the seriousness of it.

The heavy arrivals of wool from the Colonies have been accompanied by equally heavy arrivals of refrigerated meat. The meat stores have been filled for some time past, and new

consignments have had to wait || for vacant space. This has 4
 meant that vessels bringing the meat have had to be treated
 as warehouses, leading to detention most undesirable from
 every point of view. The meat importers have recently helped
 matters by agreeing to methods of storage which permit of
 carcasses | being stowed in warehouse more closely together,
 thereby increasing the capacity of the stores. This, however,
 has only given partial relief to the position. Conditions in
 this trade will be entirely changed within the next few days,
 when the Government will assume control of the | whole of
 the Colonial meat imports, and a large proportion of those
 from the River Plate. Negotiations are proceeding for
 reserving more than half the refrigerated space at the docks
 for the use of the Government. One undoubted advantage
 of Government control will be to | simplify the storage
 question not only in London, but elsewhere.

The grain warehouses throughout the port have been
 crammed with grain for several weeks past, and vessels with
 grain have been kept waiting simply because no granary 5
 keeper has any spare room ; ninety-seven barges are || now
 lying in the docks full of grain, waiting for deliveries from
 the warehouse to provide vacant space.—*The Freighters'*
Journal.

110. THE ESTABLISHMENT OF AGENCIES

THE aim of most of us engaged in manufacturing businesses
 is to extend our trade and to build up large and important
 undertakings, but unfortunately we do not always fix a
 definite policy in our minds, nor work diligently and
 systematically to the end in | view. We pay close attention
 to the organising of our works or factories, to the quality of
 our productions and numerous other internal matters, and
 being satisfied that a reliable article is being produced at a
 marketable price, we must direct our attention to the |
 problem of creating a demand for our products.

A fixed policy should, as far as practicable, be decided

4 upon and pursued rigorously ; to be constantly changing one's line of action is wasting time. The business with which we are associated may be one which lends itself to the employment of travellers who work, perhaps, from one's place of business to a pre-arranged plan. On the other hand, many large manufacturing companies establish their own offices or show rooms in our commercial centres, whence large areas are "worked." It is not every company that can support its own establishments in this manner, however, and the alternative plan is the creating of Agencies in various parts of the globe, where there is a probable market for one's manufactures.

There are, of course, various methods of conducting a home Agency, but a common plan is for all sales or contracts to be made between the manufacturer and the client, the Agent's remuneration usually being in the form of a commission on business obtained from his district.

5 If the business is of the class which calls for estimates against specific inquiries, a copy of all quotations sent to customers within the Agent's territory, or, at all events, the principal details of the quotation, will be forwarded to him, and he, in turn, will follow the inquiry up, until a decision is made.

Wherever possible, however, price lists should be established, not necessarily for issue to clients, but to enable an Agent to deal expeditiously with inquiries he receives direct.

The districts allotted to the various Agents should not be too large, but such as to enable them conveniently to keep in touch with probable clients, frequently and systematically. 2

A clear map, on which should be marked the boundaries of the Agencies arranged, will be found useful.

Carefully worded agreements should be drawn up, embodying all essential conditions, such as the extent of the Agency, the arrangement regarding remuneration, and any expenses it is agreed to contribute, notice of termination required, etc., in order to guard against friction or misunderstanding ; and, of course, the agent should be supported and

encouraged in his efforts to obtain | business, in every possible way.

In connection with our overseas trade, a huge field is open to the manufacturer who will cultivate systematically the opportunities offered.

The methods to be adopted will depend to some extent upon the particular goods manufactured, and the following observations | are therefore made on general lines. In the first place, a large amount of business is obtained through merchants in this country, who buy to the instructions of their clients abroad, but whilst not undervaluing the work obtained in this manner, one should not rest || content with it. 3 Generally speaking, a merchant has no direct incentive in selling your particular goods, at any rate, in competitive lines, and it is therefore better, wherever possible, to aim at direct representation. Secondly, there are many important houses in this country having branch | houses in various parts of the world, and remunerative Agencies can usually be arranged through this source. This removes the objection above referred to, since, as Agents, they have a direct motive in the sale of your manufactures.

On the other hand, there are many | important firms in our Colonies and elsewhere, with long established businesses, and who would make eminently satisfactory Agents, but who are not represented at home, and the question arises, how can one get into touch with such people ?

A good traders' directory or a trade | inquiry Agency may be consulted ; advertisements may be resorted to ; or one's friends at home or abroad, in non-competitive businesses, can often supply the names of suitable houses.

The value of this direct representation is particularly apparent in the case of manufacturers engaged in the || iron 4 and allied trades, makers of electrical machinery, and so on, whose contracts often run into substantial figures, and where personality on the spot often counts so much in the obtaining of the order.

As in the case of home Agencies, care should be exercised |

in the drafting of Foreign Agency Agreements, and the conditions should be expressed in clear and unambiguous language. Amongst other things to be mentioned, will be the territory covered, method of payment for orders, notice of termination required, responsibility for accounts, etc.

An Agent will often call for a clause making the Agency binding for a period of years. This is only reasonable, since a large amount of pioneer work must be done in the first years, and he hopes to reap the benefit of such work in subsequent years. On the other hand, the manufacturer may stipulate a minimum amount of business which he will expect in a given time, if the Agency is to continue and reserve the right of termination if the business is not forthcoming. It is not proposed to deal here with joint accounts. —*Magazine of Business Education.*

111. POINTS FOR THE CONSIGNEE

SELF-PRESERVATION is the first law of nature, both in business and in private life, and the trader who forgets this when he is dealing with the railway companies is likely to suffer in consequence. This is not for one moment to suggest that the companies indulge in sharp practices with the deliberate object of tripping or trapping the trader; but it is to say that these carriers have certain well-defined rules which, if ignored either through ignorance or carelessness, may seem strict and arbitrary when applied.

Thus, one rule provides that: "No claim in respect of goods, for loss or damage during the transit, for which the company may be liable, will be allowed unless the same be made in writing within three days after delivery of the goods in respect of which the claim is made, such delivery to be considered complete at the termination of the transit, . . . or in the case of non-delivery fourteen days after dispatch"; but claims for goods "smashed in transit, damage to which was discovered on unpacking," are frequently submitted to

the railway companies || a week or a fortnight after the particular consignments to which they refer have been delivered, only to be rejected on the grounds that "as the attached account was not submitted to us within the specified time we regret we cannot admit any liability in | the matter"—to quote a stock argument of the railway companies. It is only reasonable that the carriers should fix a limit to the period within which they will recognise any responsibility, and the trader will be well advised to examine carefully his inwards goods | within forty-eight hours after receipt—sooner if possible—and get his claim for any loss or damage that may have occurred during transit into the hands of the railway company without delay. The sooner the claim is rendered, the better able is the carrier to | trace the party at fault—if it is a case of damage or pilferage—and the more likelihood is there of the matter being settled at an early date.

After a small parcel has been externally examined as suggested above and the condition of it || noted, the consignee should immediately ascertain its gross weight by passing it over his own scales in the presence of the railway company's carman, and then insert, against his signature in the railway company's book, or on the sheet, as the case may be, the | exact gross weight of the parcel when delivered to him. 2

The object of this is to enable the consignee to substantiate his claim if it is discovered, on unpacking, that a pilferage has taken place during transit, for if some of the goods had been | stolen during the time the parcel was in the possession of the railway company it would naturally weigh less when delivered to him than it did when handed to the railway company by the sender; and by a comparison of the weight of the package | when received by the consignee and the weight of the package recorded at the sending station (on which weight carriage will have been charged) it could be shown that a pilferage had occurred.

For the purpose of illustration, and in order to show the

value || of the foregoing suggestion, suppose that A dispatched to B a parcel containing forty 1-lb. packets of tea, and the package and packing weighed 10 lb. The gross weight of the parcel when handed to the railway company would be, of course, 50 | lb., and the company would charge carriage on that weight. Now suppose that eight of those 1-lb. packets of tea were stolen from the parcel during transit in such a manner as to avoid outward detection, it would be in apparent good condition when | delivered to the consignee, and in the ordinary course he would give a signature accordingly, and thus stand but very little chance of obtaining compensation from the railway company. But if he were to act in accordance with the above suggestion and weigh the parcel | immediately it was delivered to him, he would naturally find that it scaled only 42 lb. Hence it could be proved that the parcel had been tampered with during transit, and he—the consignee—would be better able to support his claim. In such a || case the difference in weight should be pointed out to the company at once. 3 4

It sometimes happens that when a pilferage takes place during transit, a brick or a like article is inserted by the thief to make up for the weight of the goods | extracted from the parcel, or the empty space is filled in with straw, or shavings, or some such foreign substance to prevent the other articles in the package from shaking about and the deficiency being detected at the receiving station. 2

In a case of this | description the company should be communicated with at once, and the foreign substance handed to its representative, for with such a clue to work upon the railway company's police officers are often able to trace the culprit and take such steps as will prevent a | like occurrence.

Directly any discrepancy is discovered, a representative of the railway company should be asked to send a representative to inspect such irregularity, so that the company shall have no chance to refuse the claim on the ground that "as no opportunity was given || us to inspect the damage 5

(or pilferage) complained of and so testify as to the correctness of the claim, we regret we cannot admit any liability in the matter."—*Magazine of Business Education*.

112. NEW PARLIAMENTARY SESSION

A NEW Session of Parliament, the Session of the critical year of the Great War, is opened. The record of the past nineteen months warns us that there can be no prophesying what turn Parliamentary events may take; but the expectation, and assuredly the hope, of the Government and those who support it is that there will be less of political drama and more of decisive military event in the months ahead than in those immediately behind us. By general consent, the ensuing half-year ought to see it settled beyond all doubt for reasonable minds in any country which of the two causes now dividing Europe is to prevail in the end, howsoever long the state of war may last. Great Britain and her Allies are opening the new chapter of conflict in the knowledge that their expectation of victory never rested upon grounds so firm as those supporting it to-day. The enemy countries, whatever their uncensored opinion of the military prospect may be, show not the least failing in resolution, and have undoubtedly prepared as busily for the campaign of 1916 as any of their adversaries. On all accounts, then, there ought soon to be developed an intensity of combat greater, and even much greater, than has yet been seen in the most destructive war that was ever sent upon mankind; and if that anticipation is fulfilled, the nation will have little interest to spare for alarums and excursions at Westminster. Hope deferred and eager expectation baulked have been the prime causes of agitation and mischief in the political sphere since last spring. If they recur, they will produce the same results, and worse; but to look for that recurrence, and treat it as likely, after all that has been accomplished and charged for the better in the conditions affecting the Allies—to whose "steadfast resolve" the King's Speech bears witness

—would be | merely what a learned judge lately called “a species of treachery.” The hope of all intelligent patriotism for the Session now opened is that it may run an uneventful course—if a course may be called uneventful which is quite certain, in any case, to || see financial demands made upon the country yet more enormous than have so far been submitted to Parliament. 2

That certainly was the principal matter of the Prime Minister's speech at the opening sitting yesterday. With even greater emphasis than has marked his own or his | colleagues' earlier references to the question of finance, Mr. Asquith put before the House of Commons the urgent necessity of “facing these things seriously, and getting our people to face them.” The still mounting cost of the war, the severity of the strain that it | will impose on the national resources for many years to come, “stagger imagination.” How is that to go on? That it must go on, until the task of ridding civilisation of the foulest pest that ever threatened it is accomplished, is unquestioned and unquestionable. All | that is deepest and strongest in the inherited character of this people is pledged to that. But how are we to sustain the unexampled weight that has been laid upon our shoulders, not only by our expenditure upon our own vast share in the war, || but by our willing acceptance of the duty of supplying 3 a part of the sinews of war to our Dominions and to our Allies? We can sustain it, in the Prime Minister's words, “only by submitting to the burden—and a very heavy burden it | will be—of unprecedented taxation, by the curtailment of imports and expenditure upon unnecessary things, by the maintenance at their highest possible level of our productive activity, and of our export trade.” Not only in our Government departments—in which the necessity of retrenchment was | freely admitted by Mr. Asquith to be “all-important”—but in every department of public and private life we have to reduce expenditure. To further this is the first duty laid at this moment on the conscience of every patriotic citizen. It has been stated that | Members

of Parliament have returned from the constituencies, after the brief recess, much disquieted at the easy-going serenity in regard to the progress and prospects of the war which they have found still prevailing. There are people, both in and out of Parliament, who are || apt to treat the absence of noisy nervousness as a sign of failure to "realise the war," in spite of the death-roll and in spite of the already burdensome taxes. But that the necessity of saving to save the country is still largely disregarded admits | of no doubt whatever.

Broad surveys of the present military situation were laid before Parliament by Mr. Asquith and Lord Kitchener. In neither case was there much added to the information already in the hands of the public. The value of such reviews consists rather | in the presentation of what has happened in due proportion. That of Lord Kitchener, carefully colourless as ever, cannot be said to lean at any point in the direction of merely speculative confidence, and his occasional references to this or that substantial ground for his | own assurance of ultimate victory have all the more weight. Mr. Asquith, who dealt in more detail with some of the points involved, made the statement that this country has now present in the actual theatre of war—not counting, that is, those who remain || in these islands for home defence, for reserve, or for training—no less than ten times the Expeditionary Force with which it began hostilities.—*The Daily Telegraph*.

113. ACCOUNTANCY IN SOCIAL SERVICE

THOSE who daily travel the highways of their vocation may find pleasure, profit, and mental recreation in occasional consideration of the by-ways which connect their profession with the open roads along which pass those engaged in other callings.

It is by means of and through | these by-ways that the various branches of theoretical and applied knowledge are

so linked that underneath all diversity and complexity there seems to be a fundamental simplicity justifying belief in the unity of science, whose all-comprehending basis as yet passes individual knowledge, and eludes the present mental capacity of the race. It may be of some service, therefore, to invite those engaged in a newly organised profession like accountancy to turn for a while from the consideration of matters which more strictly pertain to their general work to the contemplation of results achieved or awaiting achievement in some of the by-ways of their vocation.

Numerical notation, the fundamental basis of accountancy, is, like the alphabet, a common possession: thus figures and letters, or their symbolical representation, enter in primary form into nearly all the transactions of everyday life, and are freely used by all for their individual needs. When transactions are extensive, continuous and complex, and affect the interests of a number of persons, or of the whole community, there is need for the services of those who, by training and experience, have special adaptability and facility in the use of numbers. Apart from the specific definition of accountancy, it has been described generally as being "the science by means of which all operations, so far as they are capable of being shown in figures, are accurately recorded, and their results ascertained and stated." In thus touching life at nearly every point, accountancy diverges from its main road into many by-ways in which its practitioners are concerned, not only with generalised enumeration and specific calculation, but also with specific classification and analysis in quantitative and qualitative form. Within our present limits it is only possible to refer briefly to the connection of accountancy with the work of the actuary, the statistician, the sociologist, and the economist. The votaries of these sciences look to the accountant primarily for the supply of the data from which, by re-arrangement, and in combination with data obtained from other sources, conclusions are arrived at which are capable of present or future application for some definite purpose, or of being utilised with data

reaped in other fields of inquiry, as the base for further research. The results are of lessened value, or may be quite misleading, if the original work of calculation and computation has been carelessly or inefficiently performed, without regard to its synthetical or analytical aspects, and without desire to maximise the utility of the information conveyed.

Many fields of inquiry and investigation are tilled either by actuaries or accountants, or by both, either in common or jointly, and in many cases "thin partitions do their bounds divide," but their domains diverge mainly through the element of time, for whilst the accountant certifies past or present fact in numerical dress, the actuary, combining this information with other data, projects his vision into the future, and, as a "scientific guesser," predicts arithmetical and mathematical probabilities. It is in dealing with expectations that the work of the actuary presents its most striking contrast with that of the accountant. It is the province of the accountant to certify facts in their rigidity; the actuary, on the other hand, estimates with elasticity the effect of a complex combination of diverse facts, and therefrom draws general conclusions which, inaccurate if applied in detail, are, by the balancing of error, accurate in the main.

In many phases, accountancy, without set purpose, provides the statistician with the raw material he tabulates in order to arrive at his conclusion, or, with set purpose, acting on the instruction of the statistician, investigates records and compiles figures under the tabulations which are set out for him as likely to afford the maximum information or the greatest number of ascertained facts out of complicated and imperfect numerical data.

In olden times the dyer's hand was "subdued to that it works in." In modern times the compiler of data may not himself be able, unless a trained or experienced statistician, to exercise that statistical insight which can discriminate between, and apply to their distinctive uses, administrative

statistics having a historical or purely official origin and those of a political or sociological character, wherein the categories, intentionally or otherwise, are sometimes so framed as to bring out certain factors more prominently than others, and at the sacrifice of relativity. The great improvement in recent years in the technique of statistical art, as regards measurement of precision, probable effects of errors, use of correlative co-efficient, and other methods, tends to give greater value to statistical evidence, and to facilitate scientific judgment in the application of statistics.

Whilst the statistician, in the main, deals with the aggregate and in quantitative form, and is, like the actuary, "careful of the type . . . heedless of the single life," and deals primarily with the "law of great numbers," which is akin to the mathematical theory of probability, the chief care of the sociologist is by segregation and qualitative analysis to ascertain the actual and relative positions of sections of society in administrative, industrial, and domestic life. In the latter, the basis of such knowledge must, in the main, be the investigation in individual cases of particular facts.—*The Incorporated Accountants' Journal*.

114. SELF-BALANCING LEDGERS

"SELF-BALANCING LEDGERS" is the term applied to ledgers kept on a system by means of which each ledger, or set of ledgers, can be balanced independently of the others. The system resolves itself into the proving of each ledger, or set of ledgers, individually, by means of a "Total" or "Proof" Account, which is usually contained at the end of the particular ledger, and which in effect contains the totals of all items posted individually to that ledger.

The greatest advantage in the system is the localising of errors, thus obviating the necessity of checking (or re-checking where all the postings have already been checked and an error passed) the whole of the work, when the Trial Balance of a set of books not on the self-balancing system

shows a difference. Another advantage is that by writing up the "Total" or "Proof" Accounts periodically (say monthly), the total Debtors and total Creditors are obtained without involving the labour of taking out the individual balances of the ledgers, which may only require to be extracted and agreed with the "Proof Accounts" at more lengthy intervals. This information, which is readily obtained, is found to be very useful for various purposes, reflecting as it does on the financial position of the business.

Usually, the sections into which the ledgers are divided for self-balancing purposes are "Sales Ledger," "Bought Ledger," and "General or Impersonal Ledger." It is assumed that the private ledger accounts are either contained in the general ledger or that a "Private Ledger Account" appears therein, so that these three ledgers comprise a complete set of double entry books. Frequently, in large businesses, however, where there are numerous sales or bought ledgers, it is found more satisfactory to keep each particular ledger on the self-balancing system.

The work involved in the self-balancing of a set of books under the three main sections mentioned above is—

In the first place, all the subsidiary books must be analysed under the various ledgers to which the items have been posted. In the case of the sales and purchase journals, and returns inwards and returns outwards books, this is a simple matter, as usually the majority of the postings from the sales journal and returns inwards book are made to the sales ledger, and from the purchase journal and returns outwards book to the bought ledger. Any cross postings (*i.e.*, postings from the sales journal to the bought or general ledgers, or purchase journal to the sales or general ledgers, etc.) must be analysed. The total postings to each ledger should be shown under the grand total of the particular subsidiary book for the period, and in total the two sets of figures should agree. In some businesses this analysis is avoided by the opening of a "Purchase Account" in the bought ledger and a "Sales Account" in the sales ledger in

cases where goods are brought from, and sold to, the same firm. | This, however, has its disadvantages, and is not put forward as ideal.

The cash book presents the greater difficulty, containing as it does a variation of entries to all the ledgers. The best method is to provide three extra analysis columns (one for each ledger) || on each side, and extend the items into the analysis columns as they are posted into the various ledgers. The analysis columns require to be added and agreed with the totals of the cash book for the period. In practice, however, this extension system is | found to have some disadvantages, especially when the cash book already contains additional columns for departmental or other purposes, as with so many columns the book is apt to get too cumbersome. In this case, | the more lengthy method of analysing would be required (*i.e.*, analysing in a separate book or sheets), and agreeing in total with the cash book totals. 3

The method of analysing the bills receivable and bills payable books, general journal, and any other subsidiary books, | depends largely upon the number of cross entries. If these are numerous, the extension analysis columns should be adopted; if the postings are chiefly to one book or set of books, the extraneous items only | be analysed, the postings to the main ledgers being | at by deduction. 4

Direct transfers of items from one account to another without entering in a subsidiary book are in any case to be condemned, but where the self-balancing system is adopted they | must be abolished, the general journal (or special transfer journal) being used for the purpose.

The entering up of the proof accounts is done as follows—

The trial balance at the date of the commencement of the self-balancing system is entered in total into | the various proof accounts (*i.e.*, the net total of balances appearing in the sales ledger is entered to the debit of the sales ledger proof account, etc.). The total postings from the various subsidiary books must be posted into the proof accounts (*e.g.*, | total sales journal postings to the sales ledger posted to the

debit of the sales ledger proof account, and so on). Thus it is obvious that the proof accounts made up to any particular date should agree with individual ledger balances extracted to that date. ||—*Magazine of Business Education*.

115. THE PORT OF LONDON

THE great port of London occupies a place of such outstanding importance, not only in this country, but in its relation to every part of the civilised world, and even to many places which cannot properly be termed "civilised," that it is impossible to give | more than a mere outline of its manifold activities. Its geographical position is such that it may truly be said to be "the hub of the universe." Not only is it the heart of the Empire, but in many respects the metaphor holds good in | its relation to the channels of communication all over the world. From this port spring, like huge arteries and veins, long lines of sea communication which stretch to the most remote parts of the globe. In its spacious docks and alongside its expansive wharves may | be seen huge cargo liners and "tramp" steamers, carrying their precious freights of wool from Australia; timber from the vast forests of Sweden and Russia; frozen and chilled meat from Australasia and the Argentine; tea, coffee, and cocoa from the plantations of China, Japan, Ceylon, || and Zanzibar; grain from the great European wheat-producing centres; sugar from Central Europe and South America; and the thousand and one commodities which, by means of an expansive network of sea communication, are brought from the distant and widely distributed areas of production to | the more concentrated centres of consumption, whereby man is enabled to enjoy the fruits of the earth for the sustenance, recreation, and enjoyment of himself and his family.

The imports of London are always considerably greater than its exports. Unlike Liverpool, in which the reverse | conditions obtain, and which is situated in the heart of a

great industrial community, London is rather a warehouse, a showroom, and a clearing house for the countless commodities received on its vast wharves and quays, providing raw materials for our textile and other industries, | supplying the food products required to sustain our population and furnishing the cargoes for our enormous trade.

In the introduction to this series of articles it was explained that, as a consequence of our supremacy in the shipping world, there are far more channels of || sea communication to this country than to other countries ; and, consequently, there are innumerable articles of commerce which, though destined for other countries in Europe and other continents, are shipped first to London before being re-exported to the country of consumption. In this way, the | port of London acts as the world's commercial clearing house.

The unique position which London occupies must be largely ascribed to its position on the broad estuary of the Thames, with abundant deep-water channels, admirably situated for coast defence, and commanding speedy sea communication with | almost every country in Europe, as well as to the fact that it is one of the connecting links between the Old World and the New.

Originally, there seems little doubt that the site of London was at the head of the Thames Estuary ; but, | as a result of magnificent engineering operations, the river was embanked for miles below the estuary and the adjoining marsh lands reclaimed.

The Nore lightship marks the mouth of the Thames, and this is 40 miles from the Metropolis itself. The port consists of the || whole of the river from Gravesend to London Bridge, and at the latter place the water is more than 30 feet deep at high tide. Its huge expanse of docks over this area, ranging in distance from London Bridge, from half a mile to 23 | miles, comprises St. Katherine's Dock, London Docks, Surrey Commercial Docks, West India Docks, East India Docks, Millwall Docks, Royal Victoria Dock, Royal Albert Dock, and Tilbury Dock.

Owing to the enormous area of these docks and the river-side wharves, the need was long felt of a central organisation whereby the immense volume of shipping could be controlled by one authority. Prior to 1909, the arrangements were in the hands of private concerns, each owning and controlling certain docks and wharves, and, as a result of the independent management thus exercised, the control of the affairs of the port was unsatisfactory. There were at that time some fifty separate and distinct governing bodies and corporations. Some of their powers had been granted in very ancient times, and the enterprises were no doubt ably managed as far as the unsatisfactory conditions would allow. In order, however, to give effect to the scheme of bringing the whole organisation of the port's activities under one central authority having complete jurisdiction over the ports, docks, river, shipping, and other services, the Port of London Act of 1908 was passed, under which the whole scheme of the government of the docks of the port of London was revolutionised. The interests of the separate dock companies were purchased, the purchase price representing a sum of over 22 million pounds sterling; and the members of the central institution thus formed were elected by the merchants responsible for the payment of the dock charges and by others directly interested in the trade of the Thames.

The functions of the Port Authority include all the services necessary in connection with our import and export trade as follows—

1. The provision of wet docks and wharves for the loading and unloading of the cargoes.
2. An adequate supply of dry docks in which vessels may be laid up for repair, etc. —*Pitman's Journal*.

SECTION XI

200 WORDS PER MINUTE

116. PRACTICAL POINTS IN BANKRUPTCY PRACTICE

WHEN a trustee is appointed in a bankrupt's estate, he has to get possession of the books and papers. Those books and papers are, for the time being, in the hands of the Official Receiver, who acts as provisional trustee, and the professional trustee, when appointed, has to obtain and take over the records. It is very advisable to make a list of these books and papers because when the estate is closed, they will have to be handed back to the Official Receiver, and if anything is missing he will at once challenge it. Then the Official Receiver has a correspondence file relating to the estate, and it is very important for the trustee to get inspection of that file because he will get a good deal of information there which might cost him some trouble to obtain otherwise. The file can usually be borrowed for a few days. He will also find that there is on the file a record of the private examination of the bankrupt. Every bankrupt is subjected by the Official Receiver to a private examination, which is recorded in writing and signed by the bankrupt. It is thus an important permanent record, and one which may come up against the bankrupt at his public examination which takes place at a later stage. It often contains important information which will not be found either in the debtor's statement of affairs or elsewhere.

The next step will be to get an office copy of the statement of affairs, the cost of which can be charged to the estate. The statement of affairs is an official record which every

debtor who is adjudicated bankrupt must file. It contains, as you know, a full statement of his assets and liabilities, and constitutes the basis upon which the trustee | commences his work, as it gives notice to him of every asset which the estate possesses—at least, it ought to do so. For instance, in going through this statement the trustee will have to see whether there is any onerous property which he may have to disclaim, such as | leases or contracts involving some obligation which would become a personal liability to himself if he did not get rid of it. He is entitled to relieve himself by disclaiming the contract or lease within twelve months of his appointment or of the time it comes to his knowledge, whichever || is the later date. If anything is mentioned in the statement of affairs either directly or indirectly of a contract or a lease, that is notice to the trustee, and if he overlooks that notice, although it may be somewhat obscure, and omits to disclaim, he may become personally liable, | or at least he will have to make a special application to the Court for leave to disclaim at a later date and probably have to pay the costs himself. It will also be necessary to obtain from the Official Receiver the proofs of debt. The first meeting of creditors | will have been held before the appointment of the trustee, and before that meeting a great many creditors will have sent in their proofs of debt. These proofs will be in the hands of the Official Receiver and he will hand them over to the trustee upon application.

The trustee | should next consider carefully what is the position with regard to the landlord and any rent that may be due to him. The landlord is not a preferential creditor under the Bankruptcy Act, but he does become practically a preferential creditor if there are goods on the premises upon which || he can distrain, because, notwithstanding the 3 bankruptcy, he can still distrain if the trustee remains in possession of the premises with goods on those premises, and, therefore, he becomes, to all intents and purposes, a preferential creditor. Some arrangement will have to be made with the landlord as regards continuing | the occupation of

the premises in order to realise the goods that are lying there. The other preferential creditors will come along in the ordinary course; their proofs will have to be dealt with, and either admitted or rejected in the usual way.

Then we come to the question of secured creditors. Those creditors may be either wholly or partly secured. For voting purposes a partly secured creditor must value his security and vote for the balance after deducting that security from his total debt, and afterwards the trustee may redeem the security by paying him out. If that is done within a month after the first meeting at which the proof has been used for voting purposes, then the trustee will have to pay the creditor 20 per cent. more than his valuation. The reason is that the creditor has had to come to a hasty conclusion as to the value in order to put in his proof for voting purposes, and, therefore, the law says he shall not be bound absolutely to that value for the time being, but, if after the lapse of a month he does not amend his valuation, then the trustee can redeem the security at the actual figure at which it has been valued, so that, as a rule, a trustee should not be in any undue haste to redeem. The matter is not pressing, and he is usually well advised to take time to consider the position.

After having a careful look round, a meeting of the committee of inspection should be called and the debtor should be asked to be in attendance. It is preferable not to have the debtor in the room to start with, but to have him in attendance to be called in if necessary. It is usually advisable also to see the debtor beforehand, and to question him on any point of doubt, so as to be as well fortified with information as possible before meeting the committee, but, nevertheless, the debtor should be in attendance. Generally speaking, the committee of inspection are more or less familiar with the debtor's affairs.—*The Incorporated Accountants' Journal.*

117. THE SHIPPING OF GOODS

ALTHOUGH in the daily rush the work may lose some of its fascination, nevertheless the shipping of goods abroad and the collection of the money they represent is a subject not only of great importance but of much interest. Most of us take, at least, a passive interest in ships and their cargoes, and in the arranging of the various shipments one's knowledge of the geography of the world is greatly improved; whilst, in connection with the collection of our accounts, much useful financial information is acquired. To proceed with our subject, however; one of the first points demanding attention is the careful packing of material for overseas shipment. We will not deal with the methods of the Packing Houses, such as those engaged in the Manchester trade, who receive, pack, and dispatch material on account of various merchants, but with those businesses where the packing and shipping is attended to by the manufacturer. As to the method of packing, it will be sufficient to say that heavy material should be securely fastened inside the cases to prevent any movement during transit, and special packing material or cases lined with tin or waterproof fabric should be employed in connection with material liable to suffer deterioration from dampness or rust. Damage frequently occurs from these sources, and is not always due to sea water or exposure. Space should be economised as much as possible, since, if the cubic tons (40 cub. ft. are allowed to the ton in the case of steamships) exceed the weight tons, freight will be charged on the basis of the former, although, of course, at the weight rate and, therefore, in the case of bulky material, say, machinery in parts, freight may be paid on empty spaces if this point is not carefully watched in packing the material. Again, the weight of packages should be kept down as far as practicable, first because of the difficulty in handling and transporting heavy weights in many places abroad, and, secondly, since the rate per ton increases with the weight of the package. For example, the rate of freight to, say,

a port in New Zealand may be 47s. per ton on 2 tons packages but, perhaps, 62s. per ton on 4 tons packages, and it will thus be seen that the total freight on a large consignment will vary very || considerably according to the weights of the separate pieces. On the other hand, any extra cost of packing in smaller units or the cost of dismantling the pieces, in the case of machinery, and the subsequent re-assembling on arrival, will be placed as a set off against the extra cost | of freight, when deciding how the material is to be packed. The next matter for attention is the marking and numbering of the cases. The customer's instructions should be very carefully followed as to the mark of identification, port mark, numbers to be used, etc.; the weights of packages are | frequently shown thereon, sometimes in lbs. and in kilos. However, no difficulty presents itself in connection with this work, the only requisite being that the marking is neat and legible. 2

We must now prepare a shipping advice for the use of both the customer and the shipping agent or steamship | company to whom the consignment is sent for shipment. This advice will contain full information as to how the material has been forwarded, and who pays the F.O.B. expenses and the freight. In the case of C.I.F. contracts, it will state how Bills of Lading are || to be drawn, if the consignment is to be insured, and if | what value; and in all cases a complete list of the packages, with weights, dimensions, marks, and numbers, will be given. It is not proposed to deal here with the question of railway carriage, as the | subject has already been adequately dealt with. 3

It is usual to dispatch goods for foreign shipment to the order of a firm of shipping agents at the port of shipment; these people, for a comparatively small charge, will look after the whole of the matters connected with the actual shipment | of the goods. For instance, they will report delay in the arrival at the docks, of any portion of the consignment, see to the goods being put on board, take out Mate's Receipt, or Bills of Lading, pay the F.O.B. expenses

on account of the consignor or in the case of C.I.F. contracts, pay freight on his account, and see that he receives the shipping documents promptly. If consular certificates of origin are required they will obtain these; and they are generally in a position to obtain favourable rates for marine insurance, and will, if required, see that this is effected.

Having completed the shipment, we must next direct our attention to the collection of any sums of money then becoming payable.

The terms of payment for goods purchased for overseas shipment vary very considerably, but we will take a few examples based on customary methods. If, for instance, goods are sold F.O.B. with cash against shipping documents this country, and the buyer has a place of business here, he will require evidence of shipment before meeting the account; but, as he is paying freight, his shipping agents will probably decline to issue the Bills of Lading to the seller, unless instructed to do so. The purchaser may, therefore, authorise his agents to hand over the documents to the agents of the seller in exchange for the Mate's Receipt of shipment, and the papers will then be passed on to the seller, who, in turn, will present them to his client in exchange for cash. Or, the seller may obtain Mate's Receipt from his agents, and pass this document on to his customer, leaving him to obtain Bills of Lading. If freight is paid by the seller, he will, of course, be able to obtain Bills of Lading himself.—
Magazine of Business Education.

118. BANKS AND SMALL DEPOSITS

A QUESTION has been asked as to what facilities are provided by banks for small depositors who wish to keep an open account on which they can draw on demand. Many persons appear to have formed the opinion that the large bank offices, which are now so much in evidence in the principal towns, are for the convenience only of customers of means, who can pay in at least a hundred pounds or so at one time,

and that it would be beneath the dignity of the officials of such establishments to open an account for an individual who could commence with a balance of, say, only £5 or £10. The size of a banking company, or the splendour of some of its offices, need not, however, deter anyone from becoming a customer, for if he closes his mind to such impressions he will find, on making known to a cashier at the bank counter that he is wishful of leaving in the bank a small sum upon deposit, that the cashier will be perfectly willing to accept it. Bankers are always ready to welcome small depositors, because many small amounts may show quite an important total, and, further, because in accepting only a few pounds as a deposit it may be merely the beginning, as many a banker has experienced, of an account which may some day show a handsome balance.

If, then, an intending depositor has decided in which bank he will leave his savings—and he cannot, on the question of safety, go wrong in choosing any one of the great banks—he will probably find on inquiry at the bank counter that there are two methods of dealing with his money, either of which he may adopt. He may accept a deposit receipt for his money, or he may open a deposit account and receive a small pass book. There will be no charge in either case, and the rate of interest will most likely be the same whether a receipt or a book be taken, in the country usually $2\frac{1}{2}$ per cent. If the former method be accepted, the depositor receives a receipt, called the deposit receipt, for his money on the bank's printed form, signed by the manager or other official of the bank. This receipt should be kept in a safe place by the depositor, so that when he wishes his money back again, all he has to do is to sign his name across a penny stamp on the back of the receipt (unless the receipt is already embossed with a penny stamp, when he merely signs his name on the back), and present the receipt to the cashier at the bank, when he will at once receive repayment of his money with any interest that is due up to date. If the receipt he holds is for, say, £20 and he desires to withdraw

only £3, he signs his name on the back, demands £3 | from the bank, and receives a fresh receipt for £17. If he wishes to add to the amount he has on deposit, he may sign the receipt he holds and obtains a fresh receipt for the increased amount, or he may simply receive a receipt for the new money, | when he will then hold two receipts either of which he can obtain cash for at his pleasure. It is quite evident, however, that if a depositor expects to be able to make frequent additions of small sums, or to require to make frequent withdrawals of small sums, the continual || changing of his receipt may be rather troublesome. It may also occur to him that a receipt is very easily lost or mislaid. A banker, of course, cannot repay money for which he has issued a deposit receipt, without either the production of the receipt duly discharged, or, if it | has been lost, a suitable indemnity, and it might be inconvenient for the depositor in such a case to provide an indemnity. 3

The other method referred to, namely, a deposit account, has several distinct advantages over the deposit receipt system. In some parts of the country small depositors are much | attached to the receipt method, whereas in other districts very few receipts are issued, the customers preferring to have an account. A person who has, say, £10 to lodge in the bank, asks the cashier to open for him a deposit account. The depositor signs at the counter a | paying-in slip for his £10, and he receives in exchange a small book, called a deposit pass book, with the amount entered on one side of the book. If he desires to pay in £2 more in a short time afterwards, he takes his book back to the || bank and the £2 is entered by the bank on the same side of the book, making thus a total of £12. If, on his next visit to the bank, he desires to withdraw £2, he takes his book to the bank and intimates what he wants. | He is then given a cheque for £2, which he signs at the counter, and receives his money, and the £2 is entered by the bank on the opposite side of the book, and by subtracting the total of the one side from the total of the other, | he sees that he has £10 left in the bank. 4

At the end of each half-year the bank enters in the pass book the amount of interest which is due to the depositor. Nothing could be simpler than this method, and small depositors who make use of it find it very agreeable and satisfactory, and there is much less danger of a book being mislaid than a piece of paper like a deposit receipt. A cheque-book is not issued to the customer for a deposit account, as it is understood that the withdrawals will be made only by the depositor in person.—*Magazine of Business Education.*

119. THE CEREAL TRADE

FEW trades are more important or interesting than the vast international commerce in grain, and there is no country in the world wherein a practical knowledge of it will not be found an asset. The production of corn is usually regarded as the enterprise of the regular farmer, but small holders can often grow to much advantage special high quality crops for which there is a constant demand at good prices. The best quality wheat is grown not in England but in Canada and the American North-West, for our slowly ripening harvests result in a mellow and palatable but somewhat starchy product, whereas the regions referred to can grow a type which ripens rapidly under constant sunshine from May to August, and consequently possesses that strength in dry gluten which is necessary for a shapely and attractive loaf. As soon as the harvest in Manitoba, Minnesota, and other "quality" regions is over, a great effort is made to get it across the Atlantic. There are, however, difficulties and delays. It sells so much better in England if graded by the Canadian Government, that nine cargoes out of ten nowadays consist of wheat which has the State hall-mark. It is a grievance of the English farmer that his own Government will not grade his wheat for him, and that he competes at a disadvantage with his Canadian relative. English millers buying wheat from over a dozen competing countries are the best judges of wheat in the world, but even

they prefer | the certificate of a Government expert to always having to sample the corn for themselves.

To learn to know a good sample of corn is a useful thing to anyone, and if the reader ever finds himself at a show like the Dairy Show in London, where seed corn is | displayed, or at any of the great country exhibitions of live stock where the seed merchants have stands, he will do well to inspect the grain there set out. He will find that the longitudinal cleft which runs along every grain is not deep in these prize samples, that the | grain itself is plump, and more or less of a true oval shape. Biting a grain across in the middle will enable him to see the colour, which should be a pure soft white, and show no grey or black specks. He will soon learn to judge of the dryness || of the grain 2 by the feel and taste, and the latter will, of course, enable him to detect the least mouldiness. If the wheat berry tastes a bit like rice, he may be sure it has been grown under a tropical sun, and has come from some such place as | Rosario, in the hotter part of South America, or else from India. If it is mellow, soft, and palatable, it will probably be either English or New Zealand wheat ; if decidedly soft and starchy, most likely it is a sample of that new French wheat which English farmers are now | advised to sow because of the very large yield to the acre. The sample of barley depends in value a good deal on the fineness of the skin, and an even pale colour, with a minute crinkling of the surface are things much esteemed. Oats have to be examined somewhat | differently, for here the undesirable element consists in thickness of husk. This varies extremely, for while expensive seed oats will be only about 5 per cent. husk, the poor oats which come to us from Argentina are often as much as 25 per cent. of mere envelope. The husk of || the 3 oat, however, is of some feeding value, and is used as an element of bulk in mixtures containing expensive and concentrated food. The price is often quite good for what is called a by-product, say, 4s. per cwt. There are not many occupations more interesting than that of | an expert in the

choice of corn ; so many countries are drawn upon, and there is such constant variety that one is ever accumulating knowledge. For a young man who does not smoke and who is an abstainer, the calling, which of course exacts an absolutely clean palate, is well | worth considering, and it has the special recommendation that knowledge can be picked up while engaged in some other occupation. If the salaries of expert tea-tasters and wine-samplers are not to be expected, there is always assured employment for the expert in grain samples.

At the present time, the United | Kingdom consumes about ten million quartern loaves daily, and as the home agriculture cannot provide more than three millions, the remaining seven have to be bought from abroad. As in country districts the loaf is still to a great extent home-made from English wheat, it is almost certain that at || 4 least 80 per cent. of the modern town loaf comes from abroad. The "Six Great Powers" on which we rely for wheat production are the United States, Canada, Russia, India, Argentina, and Australasia, their importance being about in order named. For malting barley, we look to California ; for feeding, to | Russia and, in a lesser degree, to India and Persia. Two great countries are competing desperately for English custom in the market for oats ; these are Argentina and Russia. Sometimes Canada and the United States "take a hand," but Scandinavia and Australasia are more or less out of the running | nowadays. Maize is a tropical product which seldom ripens in this country. It is a fattening and slightly laxative food, and is liked by children. It averages about 10s. per quarter cheaper than wheat, and the United Kingdom seldom uses less than ten million quarters of it yearly. It | has been remarked that no article has more clearly "a bedrock value" than maize, and that when the price falls to 5s. per cental, sales rise by at least 20 per cent. A cental, of course, is 100 lb.

There is a striking difference between the way cereals || 5 of different kinds and origin are bought and sold.—*Magazine of Business Education.*

120. WAR TAXES AND STOCK VALUATIONS

LAST month we dealt with the Income Tax provisions of the Budget so far as they were indicated in the Chancellor's speech. Since then the Finance Bill has been introduced into Parliament and its provisions in relation to Income Tax and Excess Profits Tax appear in this issue, but as there are indications that various amendments may be made in the Bill, we do not propose to deal further with it in a general way until it has become law. There is, however, one matter affecting the Excess Profits Tax and also the controlled profits under the Munitions Act, which can profitably be discussed at the present time, namely, the question of stock valuations. The Munitions Act and Rules give no guidance as to how stocks are to be valued at the beginning and the end of the controlled period, and we do not anticipate that the Finance Act when passed will afford any assistance in this direction as regards trades and businesses which are subject to the Excess Profits Tax. In other words, it will be left to the proprietors and their accountants to settle the matter with the Inland Revenue authorities. The question is therefore one which professional accountants will have to consider in connection with the accounts which come before them for certification. We do not, of course, refer to the actual taking of stock, but to the basis on which it is to be valued, as, under the exceptional circumstances, it may be that the ordinary rules will not apply. We propose first of all to discuss the subject from the point of view of the Munitions Act and the Rules made thereunder, and afterwards to see how far the same considerations will apply in the case of accounts prepared for the purpose of the Excess Profits Tax.

In the first place, it will be convenient to take the simplest possible case, namely, that of a business where, at the last balancing date—say, 30th June, 1915—the stock was taken at actual cost price and no question of allowances for old or depreciated goods arose. We will assume also that the undertaking was scheduled as a controlled establishment on

31st July last. It will be remembered that, under the Munitions Act rules, accounts have to be made up for the ordinary financial year of the undertaking, and that, where the control covers only a || part of that period, an apportionment has to be made on the basis of time. In the majority of cases it will be found that the stock has increased considerably in value at the date of the balance sheet prior to the period of control—in this case the June balance sheet; | that it has further increased at the commencement of the control; and that the realisation of the increased value has, to a large extent, fallen into the controlled period. The same remark applies to work in progress, and the question that arises is this: Should the Exchequer benefit by the | increase in value which took place prior to the establishment coming under control? The intention of the Munitions Act is apparently to secure for the Crown a proportion of the profits which accrue during the controlled period, and it seems reasonable therefore to claim that any increase in stock values | before the control commenced should be excluded. The fact that the increase in value may have resulted from the war should not affect the matter. How, then, is the necessary adjustment to be made? One method would be to alter the stock value in the accounts of the standard period || 3 by adding the *whole* increase which had accrued at the date when the control commenced, thus augmenting the profits for the standard period and decreasing the profits for the year in which the first period of control occurs. Another would be to allow the amount as a deduction from the | controlled profits. Which, if either, is correct? Providing it is conceded that the market value is the proper basis, a middle course would seem to be more equitable, viz., to take the stock at market value in the accounts of the standard period and to make a deduction from the | profits of the controlled period for any increase in value between the balancing date and the commencement of the control. This would avoid what might be regarded as an unfair increase in the profits of the standard period.

In the second place, it frequently happens that stock is taken on a conservative basis, and liberal allowance made for any loss which may be anticipated from depreciation of goods which have been held for a considerable time, and also from any anticipated fall in market values or other circumstances. Under these conditions the proprietor would suffer still more severely if no adjustment were made. It appears, however, that adjustments of this description are contemplated under Rule 9, which provides that in determining the net profits of any period of assessment "due consideration shall be given to any matter which may appear to the Minister or to the referee material to be taken into account."

Coming next to the end of the period of control, the same difficulty will arise, but in a somewhat different form. It is practically certain that many classes of goods, and especially those relating to munition work, will fall heavily in value after the conclusion of the war. To take those goods into stock at market price at the end of the financial year (which might in some cases almost coincide with the termination of the war) would obviously be to take them at a value which would never be realised, and thus bring in as profit an amount which never had been and never would be earned. This difficulty would also arise, although perhaps not quite so acutely, if the stock were taken at cost price throughout, and it is easy to see that there will be great difficulty in arriving at an equitable adjustment by any other means than treating each case on its merits.—*The Incorporated Accountants' Journal*.

121. MONEY AND CREDIT

At the conclusion of our first article on this subject the question of the creation of credit was under consideration. A little reflection will show how simple is the process by which the credit structure, without which we could not occupy our predominant position in the banking and mercantile world, is reared. If an individual can persuade a banker to make him an advance against securities, such

sum will immediately be placed to his credit with that bank, and so create a deposit. Against it, cheques may be drawn and the proceeds used for meeting the engagements of the borrower. | This money will in due course be paid into one or more of the other banks to the credit of the person or persons in whose favour the cheques are drawn, the machinery provided by the Bankers' Clearing House being used to transfer the credit from one bank to another. | As all the banks are engaged in similar operations, it should be clear that the advances of one institution become the deposits of another institution. It should be obvious also, that the lending power of the banks will be regulated largely by the amount of actual cash in their possession. || Only a relatively small percentage of banking transactions involve the payment of coin or notes across the counter, but a well-conducted bank will not distend its credits beyond what is considered a prudent level, measured by the specie and notes in its possession, since each credit created gives the power | to the borrower to take the proceeds in cash, although in actual practice very little money is withdrawn. The volume of credit which will be available for lending to the bill brokers will depend upon a great many circumstances. Very active trade, involving the circulation of large amounts of bankers' | money in the channels of industry, will restrict the quantity available for the requirements of the discount houses, and the latter may be compelled to seek other means of supplying their needs, namely, by borrowing from the Bank of England. Once a month practically all the London joint-stock banks—there | is only one exception—publish a balance sheet setting forth their principal liabilities and assets, and when the date for making up this account comes round, some at least require the bill brokers to repay a portion of the loans outstanding, in order that they may make a better showing || of cash, more especially as in all probability some part of their actual cash balances will have been drawn away from London, in order to provide for certain transactions which are treated on a strictly cash

basis, involving payment in notes and coin. These sums are transferred to the country | branches of the joint-stock banks; or the provincial banks, which bank with the London institutions, will withdraw a certain proportion of their balances. All the banks do not make up their balance sheets on the same day, and credit which has been called in by one bank on a certain | day is immediately set free and used by another bank on another day. But once or twice a year the banks, not only in London, but throughout the country, make up their balance sheets on the same day, and as combined with this there is a desire on the part | of all kinds of firms and institutions to have a good cash showing when their accounts are struck, a wholesale withdrawal of funds from the money market takes place, and the discount houses are compelled to resort to the Bank of England for a very large sum, not infrequently reaching || twenty millions 3 or more. The method is one which meets with a good deal of criticism, and it would be good to see it abolished, but here a very big question opens out which must be reserved for another occasion. Bankers also lend freely to the Stock Exchange for the | purpose of financing the speculative commitments in which the members of that body and the general public are wont to indulge, and if business is active, which it has not been lately, important amounts will be employed in this way, making demands on credit resources which may lead to the | curtailment of facilities for borrowing in other directions. When we are all paying our income tax sometime between January and March, very large sums will be transferred from our balances at the banks to the credit of the Government at the Bank of England, and so reduce the amount of | funds available for ordinary banking purposes. There is, in fact, a constant ebb and flow of money on Treasury account, as throughout the year the Exchequer is drawing in funds in the form of taxes, and setting it free again as fuel to ensure the smooth running of the machinery || 4 of Government. Up to a point, the collection and disbursement of the country's taxation are spread more or less evenly

over the financial year, which concludes on 31st March, and it is only the income and property taxes which are crowded into the final quarter, and almost invariably produce acute stringency in the loan market by curtailing the volume of bankers' money which can be offered to the discount houses and others in need of it. Of course, it happens sometimes that the supply is more than sufficient for all purposes, in which case the operation of the ordinary economic laws governing supply and demand will usually but not always enable credit to be obtained on easy terms, which in due course will affect the rates of interest at which the discount houses will buy the bills offered to them. Easy monetary conditions will often be experienced after the banks have completed the balance sheet operations referred to, and are again willing to use their funds in the market, when the Government is spending freely or paying the interest on the National Debt. So far, we have confined attention to the internal aspect of banking and monetary matters, and there remains the big influence exerted by the external movement of gold.—*Magazine of Business Education.*

122. CLASSIFICATION OF OCCUPATIONS

BEFORE people, as the result of trade, became organised into civilised communities, there was little difference between the employment of one man and that of his neighbour. Savages are all very much alike; it is only as society advances that differentiation appears. All were fruit-gatherers or fishers or hunters; at a later stage all were engaged in the tending and rearing and using of their sheep or their cattle. Now, however, so far has division of labour been carried that the most astonishing diversity of employments exists. At the Census of 1911, hundreds of the names given in answer to the question "Occupation?" were unintelligible to the ordinary man: the Census authorities themselves were obliged to construct a little dictionary before they ventured to group the occupations into classes. The many thousands

of workers grouped all co-operate with one another, and in order to make a living sell | their services. They are all producers helping to provide for the wants of the great community in which they live.

These wants are not few nor small. Every day in our islands forty millions of people desire, and most of them get, three or four meals a day. That the || many millions | of loaves may be baked each day involves a long chain of industries stretching from the farm to the baker's shop. *Extractive* industry (which forces the field to yield grain for making the bread, or the mine to yield iron and fuel for cooking it); *manufacturing* industry (which | grinds the wheat into flour or supplies the implements that aid in its production or the material means, the ships and engines, for conveying it to its consumer); and the *trading* industry (which brings the food within reach of the eater, which enables the densely packed cities of our land | to be fed from the prairies of the Middle West or the pampas of the Argentine)—these are incessantly engaged in a struggle against starvation. And food is one only of our needs. Clothing and shelter and fuel are nearly as urgent; and these, too, involve long series of industries. | Other cravings we have that can be satisfied by personal service alon ; the craving for amusement, calling for the services of the music-hall artiste or the cinema operator; the craving for enlightenment, calling for those of the teacher or preacher or writer; the craving for freedom from pain, calling || for doctor and 2 dentist and nurse.

Since all these occupations, from that of the Prime Minister controlling the affairs of the Empire to that of the artistes doing their turn at the halls, are called for in the life of the nation, we must regard those engaged in them as | *productive* workers. We are not to refuse the term to the doctor because his service results in nothing tangible and material, while we bestow it on the ignorant negro who gathers the drug that—through the doctor's skill in administering it—restores the patient to health. We are not to | call the

manager of the mill unproductive because he does nothing but direct and overlook, while the boy that feeds the loom seeking to supply its insatiable demand for thread is a productive labourer. For when we use the word "Production," we imply not the creation of matter—that, indeed, all the labour in the world could not do—but the bringing out of *Utility*. To Produce is to give Utility. And this utility may be embodied in a material thing, as when the miner loosens the coal from the surrounding layers and so gives it the added property of || being more readily taken to furnace or fire; or when human exertion utilising the agency of fire transforms the decomposing granite into porcelain and the sand into glass. The workers in mine or china factory or glass-house are not creating matter; but they are causing matter to assume properties by | which, from having been useless to us, it becomes useful. 3

Still, Utility resulting from the work of Production need not be embodied in a material object capable of being transferred from one person to another. It may very well be fixed and embodied in human beings. The change may be | less palpable, less evident to the senses than in the case of material objects. But unless our payment for tutors and lawyers, clergymen and actors, is vain, a Utility has been produced; a pleasure has been given—an inconvenience or a pain has been averted; and to a greater or | less degree there is a permanent change in the person to whom the service has been rendered. The utility conferred on humanity by the labour, other than muscular, of writers and thinkers may persist throughout the ages; and be productive of good—of wealth or well-being—to the end of || time. 2

Production, we have noted, is now so complicated and so greatly divided, that it calls for a grouping into classes. One other point must be considered before we deal with this classifying. Production may not be the result of *labour*. Utilities may be, and are in ever-increasing quantity, brought | out by persons who exert their muscular or nervous 4

faculties without any feelings of a disagreeable kind, but solely because of the pleasure derived from the occupation. Such exertion—the unpaid services of councillors, magistrates, students, for example—though they add much to the income of humanity, cannot be regarded | as *Labour*. For labour, to use a well-known definition, is "an exertion of mind or body undergone partly or wholly with a view to some good other than the pleasure derived directly from the work." The work of a Member of Parliament, even the attendance at dreary and drowsy debates, | would in most cases be as earnestly and efficiently performed if there were no £400 a year attached to it. The salary should be regarded as an acknowledgment from a grateful country for services rendered, rather than as a reward for labour. To the extent that we delight || in 5 our work, the work is not labour; and the reward we obtain for it is nothing but a by-product.—*Magazine of Business Education*.

123. NEGOTIABLE INSTRUMENTS

A NEGOTIABLE instrument is a document which, on being transferred from one person to another, confers upon the person to whom it is transferred the full title to the benefit of the document, irrespective of any defects that there may be in the transferor's title, and free from the claims | of any other person, provided that the transferee is a *bonâ-fide* holder for value and that he took the instrument without notice of any defective title of the party from whom he received it. A person who takes a negotiable instrument in good faith and for value obtains a | title valid against all the world.

A negotiable instrument, such as a bond payable to bearer, is transferred by delivery, that is, by simply handing over the document to the purchaser. An instrument like a cheque payable to order, must first be indorsed and then be transferred by delivery.

A | bank note is a negotiable instrument, and, therefore,

if a person receives a bank note honestly and for value he becomes the absolute owner of it. Even if the person from whom he obtained the note had stolen it, and consequently had no title to it, his legal right to || the note is complete so long as he gave full value for it and did not know, when he took it, that the note had been stolen.

Bills, promissory notes, and cheques are negotiable instruments. The negotiation of a bill of exchange means its transfer from one person to another, | in such a manner as to constitute the transferee the holder of it. A bill payable to bearer is negotiated by delivery, but if it is payable to order it is negotiated by the indorsement of the holder accompanied by delivery. It is to be noted that "delivery" is an | important factor in the negotiation of a bill. The Bills of Exchange Act, 1882 (Section 21), provides that every contract on a bill, whether it be the drawer's, the acceptor's, or an indorser's, is incomplete and revocable until delivery of the instrument, in order to give effect thereto; provided | that where an acceptance is written on a bill, and the drawee gives notice to or according to the directions of the person entitled to the bill that he has accepted it, the acceptance then becomes complete and irrevocable.

A holder of a bill is called a holder in due || course when 2 he has taken the bill, complete and regular on the face of it, under the following conditions: that he became the holder of it before it was overdue, and without notice that it had been previously dishonoured, if such was the fact; that he took the bill in | good faith and for value, and that at the time the bill was negotiated to him he had no notice of any defect in the title of the person who negotiated it. When the holder of a bill of exchange (which, of course, includes a cheque) is a holder in | due course, he holds the bill free from any defect of title of prior parties, as well as from mere personal defences available to prior parties among themselves, and may enforce payment against all parties liable on the bill. The above are the provisions which the Bills of Exchange Act | specifically applies to bills of exchange, but they do not

differ much from the conditions which apply to other negotiable instruments, these conditions being that the negotiation must be in good faith and for value and without notice of any defect in the transferor's title, in order that a good title may be obtained. 3

Where a bill is negotiable in its origin, it continues to be negotiable until it has been restrictively indorsed or discharged by payment, or otherwise. A restrictive indorsement is one which prohibits the further negotiation of the bill; for example, if a cheque is indorsed "Pay | John Brown only," John Brown has no power to transfer his rights as indorsee to anyone else, though he has the right to receive payment of the bill and to sue any party thereto that his indorser could have sued. A restrictive indorsement may also be in a form which | expresses that it is a mere authority to deal with the bill as thereby directed, as "Pay D or order for collection."

Cheques may be crossed generally or crossed specially. A general crossing means that the cheque bears across its face the words "and company," or any abbreviation thereof, between | two parallel transverse lines, either with or without the words "not negotiable," or two parallel-transverse lines simply, either with or without the words "not negotiable." A special crossing is one where the cheque bears across its face an addition of the name of a banker, either with or without || the words "not negotiable." A cheque may be 4 crossed generally or specially either by the drawer or by the holder, and where a cheque is crossed generally or specially, either the drawer or the holder may add the words "not negotiable." The ordinary meaning of the words "not negotiable" upon | a cheque is apt to lead one to conclude that such cheque cannot be further transferred, but this is not so, for so long as there is no defect in the title the cheque may be transferred from one person to another as freely as a cheque without those words, | and each successive holder acquires a full title. The meaning of the words "not negotiable" upon a crossed cheque is given in Section 81

of the Bills of Exchange Act, namely, that where a person takes a crossed cheque which bears on it the words "not negotiable," he shall not have and shall not be capable of giving a better title to the cheque than that which the person from whom he took it had. It follows, therefore, that if a person takes a "not negotiable" cheque, even in good faith and for value, and without notice of any defect in the transferor's title, he cannot obtain any better title to the cheque or its proceeds than the transferor had.—*Magazine of Business Education*.

THE END

AN ABRIDGED CATALOGUE OF THE SHORTHAND, TYPEWRITING AND STATIONERY PUBLICATIONS OF SIR ISAAC PITMAN & SONS, LTD.

LONDON: 1 ABEN CORNER, E.C. 4
 BATH: Phonetic Institute. NEW YORK: 3 West 45th St.
 MELBOURNE: The Rialto, Collins St.

SOLD BY ALL BOOKSELLERS THROUGHOUT THE WORLD

The Prices contained in this Catalogue
 :: apply only to the British Isles ::

TERMS—

Cash MUST be sent with the order, AND MUST INCLUDE AN APPROXIMATE AMOUNT FOR THE POSTAGE. When a remittance is in excess of the sum required, the surplus will be returned.

Sums under 6d. can be sent in stamps. For sums of 6d. and upwards Postal Orders or Money Orders are preferred to stamps, and should be crossed and made payable to SIR ISAAC PITMAN & SONS, LTD.

Remittances from abroad should be by means of International Money Orders in Foreign Countries, and by British Postal Orders within the British Overseas Dominions. Colonial Postal Orders are not negotiable in England. Foreign stamps CANNOT BE ACCEPTED.

All the Books in this Catalogue are in foolscap 8vo size
 unless otherwise stated.

SHORTHAND INSTRUCTION BOOKS.

Centenary Editions.

PITMAN'S SHORTHAND TEACHER. An elementary work suited for self-instruction or class teaching	81.
KEY TO "PITMAN'S SHORTHAND TEACHER"	81
PITMAN'S SHORTHAND EXERCISES. A series of Graduated Sentence Exercises on the <i>Shorthand Teacher</i>	2d.
PITMAN'S SHORTHAND PRIMERS. For Use in Day Schools and Evening Classes. In three Books: Elementary, Intermediate, and Advanced	Each 3d.
KEY TO "PITMAN'S SHORTHAND PRIMER." Books I, II, and III	Each 8d.
PITMAN'S SHORTHAND READING LESSONS, No. 1	8d.
KEY TO "PITMAN'S SHORTHAND READING LESSONS, No. 1"	3d.

PITMAN'S SHORTHAND READING LESSONS, No. 2	8d.
KEY TO "PITMAN'S SHORTHAND READING LESSONS, No. 2"	3d.
PITMAN'S SHORTHAND READING LESSONS, No. 3	8d.
KEY TO "PITMAN'S SHORTHAND READING LESSONS, No. 3"	3d.
PITMAN'S SHORTHAND COPY BOOKS. Nos. 1, 2, 3, and 4.	
An entirely new series covering the theory of the system.	
Poolscap 4to (8½ in. by 6½ in.)	6d.
Each	1d.
COMPEND OF PITMAN'S SHORTHAND	
PITMAN'S SHORTHAND INSTRUCTOR. Complete Instruction	
in the system. Cloth	4/-
KEY TO "PITMAN'S SHORTHAND INSTRUCTOR"	1/6
Cloth	2/-
	1d.
THE CENTENARY CHANGES IN PITMAN'S SHORTHAND	
SUMMARIES FROM "PITMAN'S SHORTHAND INSTRUCTOR."	
Size, 2½ in. by 4 in.	3d.
PITMAN'S SHORTHAND MANUAL. Contains instruction in the	
Intermediate Style, with 100 Exercises	2/-
Cloth	2/6
	8d.
KEY TO "PITMAN'S SHORTHAND MANUAL"	
PITMAN'S SHORTHAND GRADUS. Writing Exercises in ordinary	
print for <i>Manual</i>	3d.
PITMAN'S SHORTHAND REPORTER. Containing instruction in	
the Advanced Style: with 52 Exercises	2/6
Cloth	3/-
	8d.
KEY TO "PITMAN'S SHORTHAND REPORTER"	
REPORTING EXERCISES. Exercises on all the rules and con-	
tracted words. In ordinary print, counted for dictation . .	6d.
KEY TO THE "REPORTING EXERCISES." Advanced Style . .	1/-
PITMAN'S SHORTHAND CATECHISM. Containing over 1,200	
questions and answers on the theory of the system. In crown	
8vo.	1/6
PITMAN'S SHORTHAND WRITING EXERCISES AND EXAM-	
INATION TESTS. Contains exhaustive classified lists of words	
illustrative of every rule in the system, and graduated sentence	
exercises in ordinary print for writing or dictation practice.	
In crown 8vo, paper boards	2/-
KEY TO "PITMAN'S SHORTHAND WRITING EXERCISES AND	
EXAMINATION TESTS." In crown 8vo, cloth	3/6
EXAMINATION NOTES ON PITMAN'S SHORTHAND. By	
H. W. B. Wilson. 8 in. by 3½ in., cloth	1/6
GRADED SHORTHAND READINGS.	
Elementary, with Key. In crown 8vo, oblong	6d.
Intermediate, with Key. In crown 8vo, oblong	3d.
Advanced, with Key. In crown 8vo, oblong	8d.
GRADED SHORTHAND READINGS. SECOND SERIES.	
Intermediate, with Key. In crown 8vo, oblong	8d.
GRADUATED TESTS IN PITMAN'S SHORTHAND. Illustrating	
all the rules in the Intermediate Style. In note-book form,	
post 8vo (6½ in. by 4½ in.), with ruled paper	3d.
PROGRESSIVE STUDIES IN PITMAN'S SHORTHAND. A	
simple and extended exposition of the principles of Pitman's	
Shorthand	1/-
TALKS WITH SHORTHAND STUDENTS. By JAMES HYNES . .	1/-
LECTURETTES ON PITMAN'S SHORTHAND. By the same	
Author	1/-
CHATS ABOUT PITMAN'S SHORTHAND. By GEORGE BLETCHER	
PITMAN'S SHORTHAND RAPID COURSE. A Series of Twenty	
Simple Lessons covering the whole of the system and specially	
adapted for business purposes. Complete with Additional	
Exercises. In crown 8vo, cloth, 200 pp.	4/-

PITMAN'S SHORTHAND RAPID COURSE. Without Additional Exercises	
KEY TO "PITMAN'S SHORTHAND RAPID COURSE"	2/6
ADDITIONAL EXERCISES ON "PITMAN'S SHORTHAND RAPID COURSE"	2/-
READING EXERCISES ON THE RAPID COURSE (in Shorthand) 62 pp.	8d.
PITMAN'S SHORTHAND DRILL EXERCISES (8½ in. by 6 in.)	1/-
PITMAN'S SHORTHAND COMMERCIAL COURSE. Specially adapted for commercial students. Cloth, 240 pp.	8d.
KEY TO "PITMAN'S SHORTHAND COMMERCIAL COURSE."	4/-
ADDITIONAL EXERCISES FOR "PITMAN'S SHORTHAND COMMERCIAL COURSE"	2/-
SUPPLEMENTARY EXERCISES IN PITMAN'S SHORTHAND. For use with "Commercial" Course. In crown 8vo	1/-
PITMAN'S EXERCISES IN BUSINESS SHORTHAND. By A. BENJAMIN, I.P.S. (Hons.), F.C.Sp.T. For use with the <i>Instructor</i> or the <i>Shorthand Commercial Course</i>	1/6
	1/-

GRAMMALOGUES AND CONTRACTIONS.

GRAMMALOGUES AND CONTRACTIONS. For use in classes	2d.
VEST POCKET LIST OF GRAMMALOGUES AND CONTRACTIONS OF PITMAN'S SHORTHAND. 2½ in. by 1½ in., limp cloth	2d.
EXERCISES ON THE GRAMMALOGUES AND CONTRACTIONS OF PITMAN'S SHORTHAND. By J. F. C. GROW. In Shorthand, with Key. In crown 8vo, limp cloth	6d.
HOW TO PRACTISE AND MEMORISE THE GRAMMALOGUES OF PITMAN'S SHORTHAND. Compiled by D. J. GEORGE. Size 7½ in. by 5 in.	4d.
GRAMMALOGUE AND CONTRACTION DRILL CARDS	1/-

SHORTHAND DICTIONARIES.

PITMAN'S ENGLISH AND SHORTHAND DICTIONARY. Edited by A. REYNOLDS, M.A. Contains concise definitions as well as shorthand forms. Cloth	7/6
PITMAN'S SHORTHAND DICTIONARY. Contains the shorthand forms, fully vocalised, for 62,000 words; and alphabetical lists of all grammalogues and contractions. Crown 8vo (7½ in. by 5½ in.), 378 pp. Cloth	6/-
PITMAN'S POCKET SHORTHAND DICTIONARY. Royal 32mo (3½ in. by 4½ in.). Cloth	1/6
PITMAN'S REPORTER'S ASSISTANT. Companion volume to <i>Pitman's Shorthand Dictionary</i> . In crown 8vo, cloth, 230 pp.	1/7

SHORTHAND PHRASE BOOKS, ETC.

PHONOGRAPHIC PHRASE BOOK. Over 2,400 useful general Phrases. New and Revised Edition, with a valuable introduction dealing with the principles of phraseography	1/6
SHORTHAND WRITERS' PHRASE BOOKS AND GUIDES. Each includes about 1,500 Technical Terms and Phrases with	2/-

Shorthand equivalents; a careful explanation of the Shorthand-Typist's duties, and many Exercises. Each in fcap. 8vo, cloth, about 92 pp. Not

Electrical and Engineering.	Stockbroking and Financial
Railway	Commercial
Estate Agents, etc.	Legal
Printing and Publishing	Municipal
Insurance	Iron and Steel Trades
Banking	Civil Engineering
Chemical and Drug Trades	Naval and Military

2/-

Others in preparation.

MEDICAL REPORTING IN PITMAN'S SHORTHAND. By H. DICKINSON. With an Introduction and Lists of Phraseograms, Outlines and Abbreviations. In crown 8vo, cloth Not

2/-

SHORTHAND CLERK'S GUIDE. By VINCENT E. COLLINGS, A.C.I.S. Specially designed for shorthand clerks working in a professional, government, or commercial office. In crown 8vo, cloth 1/6

3/6

TECHNICAL REPORTING. New Edition.

DICTIONATION AND SPEED PRACTICE BOOKS.

SPECIALISED CORRESPONDENCE BOOKS. (1) The Chemical Trade. (2) The Paper Trade. (3) The Building Trade. In ordinary print. Each

5/-

GRADUATED DICTATION BOOKS. (1) Political Speeches. (2) Sermons. (4) Speeches (Commercial) and Addresses. In ordinary print. In crown 8vo Each

4/-

GRADUATED DICTATION BOOKS. (New Series.) Book I, Commercial, and II, Political Each

6/-

REPORTING PRACTICE. Dictation Exercises in ordinary type, marked in 20's and 30's. In crown 8vo, cloth 2/6

2/6

PROGRESSIVE DICTATOR. Letters in ordinary print. Counted for various rates of speed. Third Edition. In crown 8vo, cloth 2/6

2/6

SHORTHAND CANDIDATE'S DICTATION EXERCISES. Original test pieces, specially compiled and arranged for dictation practice. Counted for dictation. In crown 8vo, cloth 1/-

1/-

COMMERCIAL DICTATION AND TYPEWRITING. 1/-

8/-

GRADUATED COMMERCIAL LETTERS FOR DICTATION. 8/-

2/-

SPEED TESTS AND GUIDE TO RAPID WRITING IN SHORTHAND. In crown 8vo, cloth 2/-

2/-

FIVE MINUTE SPEED TESTS. With Introduction on Acquisition of Speed by P. F. JACKSON. Contains 123 tests of miscellaneous matter counted for varying rates of speed from 80 to 200 words a minute. In crown 8vo, cloth 2/-

2/-

CUMULATIVE SPELLER AND SHORTHAND VOCABULARY. By CHARLES E. SMITH. In crown 8vo, cloth 2/-

2/-

POCKET DICTATION BOOKS, Nos. 1, 2, 3, and 4. Speeches, etc., in ordinary print, counted in 10's for dictation. 2 1/2 in. by 3 1/2 in. Each

2/-

SPEED TRAINING IN PITMAN'S SHORTHAND. By T. F. MARRINER. A twelve weeks' Course of study and speed practice 6/-

6/-

ACQUISITION OF SPEED IN SHORTHAND. By E. A. COPE. In ordinary print. In crown 8vo. 8/-

8/-

BROWN'S SHORT-CUTS IN SHORTHAND. Phrases and Abbreviations for Fast Writers of Pitman's Shorthand. By GEORGE BROWN, F.I.P.S. In crown 8vo 1/-

5/-

THE STENOGRAPHIC EXPERT. For Pitman Shorthand-Writers. By W. B. BORTOME and W. F. SMART. In demy 8vo, cloth, 270 pp. Not

1/-

SHORTHAND COMMERCIAL LETTER-WRITER. Advanced Style

KEY TO THE "SHORTHAND COMMERCIAL LETTER-WRITER"	6d.
THE SHORTHAND COMMERCIAL LETTER-WRITER AND KEY. in one volume Cloth	2/-
OFFICE WORK IN SHORTHAND. Specimens of Legal and other Professional Work commonly dictated to Shorthand Clerks, in the Advanced Style	1/3
KEY TO "OFFICE WORK IN SHORTHAND."	6d.
COMMERCIAL CORRESPONDENCE IN SHORTHAND. Advanced Style. In crown 8vo, cloth	2/6
BUSINESS CORRESPONDENCE IN SHORTHAND. In the Advanced Style	1/3
KEY TO "BUSINESS CORRESPONDENCE IN SHORTHAND"	6d.
TRADE CORRESPONDENCE IN SHORTHAND. In the Advanced Style	1/3
KEY TO "TRADE CORRESPONDENCE IN SHORTHAND"	6d.
MISCELLANEOUS CORRESPONDENCE IN PITMAN'S SHORTHAND. First, Second, and Third Series. Advanced Style, with Keys in ordinary print. Each in crown 8vo, oblong. Limp cloth	1/-

PITMAN'S SHORTHAND READING BOOKS.

<i>In the Elementary Style.</i>	
ÆSOP'S FABLES	6d.
EASY READINGS. With Key	6d.
LEARNER'S SHORTHAND READER. Illustrated	6d.
STIRRING TALES	6d.
PERILS OF THE BUSH, AND OTHER STORIES	6d.
<i>In the Intermediate Style.</i>	
PITMAN'S PHONOGRAPHIC READER, No. 1. With Key	6d.
THE BATTLE OF LIFE. By CHARLES DICKENS Cloth	1/6
THE VICAR OF WAKEFIELD. By OLIVER GOLDSMITH. Illustrated	2/-
THE RUNAWAY AIRSHIP AND OTHER STORIES Cloth	2/6
TALES AND SKETCHES. By WASHINGTON IRVING. With Key	1/6
GULLIVER'S VOYAGE TO LILLIPUT. By JONATHAN SWIFT Cloth	2/-
TALES OF ADVENTURE. By various Authors	2/-
SUBMARINE 77 AND OTHER TALES	1/-
THE SILVER SHIP OF MEXICO. An abridgment of J. H. INGRAHAM's Story. Cloth	1/-
SELECT READINGS, No. 1	1/6
SELECT READINGS, No. 2	6d.
THE BOOK OF PSALMS. Bible Authorised Version. Cloth gilt, red edges	6d.
COMMERCIAL READERS IN SHORTHAND. (1) Commercial Institutions. (2) Commodities. (3) Leaders of Commerce. (4) Gateways of British Commerce Each	2/6
<i>In the Advanced Style.</i>	
PITMAN'S PHONOGRAPHIC READER, No. 2. With Key	6d.
A CHRISTMAS CAROL. By CHARLES DICKENS Cloth	1/3
AROUND THE WORLD IN EIGHTY DAYS. By JULES VERNE	1/6
TALES FROM DICKENS	2/-
THE SIGN OF FOUR. By Sir A. CONAN DOYLE Cloth	2/-
THE RETURN OF SHERLOCK HOLMES. By Sir A. CONAN DOYLE. In two vols.; cloth Each	2/-
SELF-CULTURE. By J. S. BLACKIE	1/-
KEY TO "SELF-CULTURE" . In post 8vo Cloth	1/6
	2/6

SELECTIONS FROM AMERICAN AUTHORS. With Key . . .	1/3	
THE LEGEND OF SLEEPY HOLLOW. By WASHINGTON IRVING. With Key . . .	2/-	
RIP VAN WINKLE. By WASHINGTON IRVING. With Key . . .	2/-	
A COURSE IN BUSINESS TRAINING. By G. K. BUCKNALL, A.C.I.S. Crown 8vo, 288 pp., 2/- Key, 192 pp.	2/-	
† THE HOLY BIBLE. In the Easy Reporting Style. In demy 8vo (8½ in. by 5½ in.), 800 pp. Cloth, red edges	12/-	
	Roan, gilt edges	12/-
	Morocco, gilt edges	15/-
† THE NEW TESTAMENT. In Easy Reporting Style, with two coloured maps. Size of page, 6½ in. by 4 in.		
	Roan, red edges	4/6
	Morocco, gilt edges	5/-

FOREIGN ADAPTATIONS OF PITMAN'S SHORTHAND.

ESPERANTO PHONOGRAPHY. By G. LEDGER. In English. Net	1/-	
ESPERANTO SHORTHAND. By A. W. LYNDRIDGE	1/-	
FRENCH PHONOGRAPHY. By T. A. REED. Rules in English, Examples, etc., in French. Fourth Edition	2/-	
STENOGRAPHIE PITMAN. By SPENCER HERBERT. Cloth	2/6	
FRENCH ADAPTATION. By H. DELAJOUX. Cloth	2/6	
GERMAN SHORTHAND. In German and English. Cr. 8vo.	1/6	
	Cloth	2/-
LATIN PHONOGRAPHY. By Rev. W. TATLOCK, S.J. In Latin. Cloth	2/6	
SPANISH SHORTHAND. In Spanish. Cloth	2/6	
KEY TO "SPANISH SHORTHAND." Cloth	2/-	
TAQUIGRAFIA ESPANOLA CORRESPONDENCIA. Commercial Correspondence Exercises. Cloth	1/6	
WELSH SHORTHAND. In Welsh	2/-	

SHORTHAND TEACHERS' BOOKS.

PITMAN'S SHORTHAND TEACHER'S HANDBOOK. In crown 8vo, cloth	1/6	
EXAMINATION NOTES ON PITMAN'S SHORTHAND. See page 2.		
NOTES OF LESSONS ON PITMAN'S SHORTHAND. Size 8 in. by 3½ in., cloth	2/6	
PREPARATION FOR A SHORTHAND TEACHER'S EXAM- INATION. Size 8 in. by 3½ in., cloth	1/6	
A COMMENTARY ON PITMAN'S SHORTHAND. An exhaustive analysis of the Principles of the System, and a Guide for Advanced Students and Teachers. By J. W. TAYLOR. In foolscap 8vo, cloth gilt, 448 pp.	4/6	
DERIVATIVE AND COMPOUND WORDS IN PITMAN'S SHORT- HAND. By H. W. B. WILSON	2/-	
THE METHODS OF TEACHING SHORTHAND. By E. J. McNAMARA, M.A. In crown 8vo, cloth gilt	2/6	
CHART OF THE PHONOGRAPHIC ALPHABET. 22 in. by 35 in. Mounted on canvas with rollers and varnished	2/-	
CHARTS ON PITMAN'S SHORTHAND. Twenty large Charts (22 by 35 in.)	7/6	
	Mounted on canvas	15/-

† Twentieth Century Edition.

SHORTHAND STATIONERY.

In ordering through a bookseller state particularly "Fono" series and the register number which is printed on each copy.

Fono Note-books of any description made to order. Sample leaves of Note-books post free.

- No. 1.—32 pp., red lines, suitable for pen or pencil; with the Gramma-logues, alphabetically arranged, printed inside the cover. Price 2d., by post 2½d.; six copies, by post, 1s. 4d. twelve copies, by post, 2s. 5d.
 No. 2.—72 pp., red lines, suitable for pen or pencil; with the Gramma-logues inside the cover. Price 4d., by post 5d.; six copies, by post, 2s. 5d.; twelve copies, by post, 4s. 6d.
 No. 3.—90 pp., with the Contracted Words inside the cover. Price 6d., by post 7½d.
 No. 4.—90 pp., superior paper, elastic binding; with List of Longhand Press Contractions and Press Telegraph Regulations printed inside the cover. Price 6d., by post 9½d.
 No. 5.—90 pp., 8 in. by 5 in., elastic binding to open flat, price 9d. by post, 1s. Single or Double lines. Cloth cases for holding this Note-book can be had at 1s. each.
 No. 20.—150 pp., 8½ in. by 5½ in., elastic binding, single lines, stiff boards, marginal red line. Price 1s. 6d. by post, 1s. 9d.
 [Note: Nos. 1 and 2 are temporarily suspended.]

REPORTING PAPER, packet of five quires, 2s.

PENS, PENCILS, ETC.

- PITMAN'S "FONO" SELF-FILLING FOUNTAIN PEN**, 6s.; with two plain rolled gold bands, 7s. 6d.; with two chased rolled gold bands, 8s. 6d.
PITMAN'S "FONO" PENCILS, per dozen, 2s. If one dozen is ordered, 2½d. for postage must be added.
BOXES OF PENS containing 9 doz., 1s. 6d.

TYPEWRITING WORKS.

- THE JUNIOR TYPIST**. By ANNIE E. DAVIS. A complete guide to the Elementary Examinations. Demy 8vo, cloth . . . Net 1/6
NEW COURSE IN TYPEWRITING. By MRS. SMITH-CLOUGH. Large post 4to . . . 1/6
A TYPEWRITING CATECHISM. By MRS. SMITH-CLOUGH. Large post 4to . . . Net 3/6
PITMAN'S TYPEWRITER MANUAL. Can be used with any machine. 6th Edition. Large post 4to. Cloth . . . 5/-
PITMAN'S TYPEWRITING EXAMPLES for any machine—
 On cards, 48 examples, fcap. folio . . . 2/-
 In oblong note-book, for standing by the side of the machine . . . 2/-
 In note-book form, in covers . . . 1/6
PITMAN'S EXERCISES AND TESTS IN TYPEWRITING. Fcap. folio. Fourth Edition . . . 2/-
HOW TO TEACH TYPEWRITING. By KATE PICKARD, E.A. (Lond.). Crown 4to, cloth . . . Net 3/-
PRACTICAL COURSE IN TOUCH TYPEWRITING. By C. E. SMITH. English Edition. Revised and Enlarged . . . 2/-

PRACTICAL TOUCH TYPEWRITING CHART. Size, 30 in. by 40 in. On stout paper. Net 2/6
REMINGTON TYPEWRITER MANUAL. For Nos. 5 and 7, 10 and 11. With Exercises and Illustrations. 8th Edition. Lr. post 4to Net 1/6
 Cloth 2/-
INSTRUCTIONS ON THE REMINGTON (Nos. 7, 8, 10, and 11), **YOST** (No. 10), and **BAR-LOCK TYPEWRITERS.** Each, demy 8vo 6d.
THE UNDERWOOD TYPEWRITER MANUAL. By A. J. SYLVESTER. Large post 4to 2/6
THE BAR-LOCK TYPEWRITER MANUAL. By H. ETHERIDGE. Large post 4to 2/-
MODERN TYPEWRITING AND MANUAL OF OFFICE PROCEDURE. By A. E. MORTON. 6½ in. by 9½ in. Cloth 5/6

WORKS IN ORDINARY TYPE.

LIFE OF SIR ISAAC PITMAN. Demy 8vo, with many illustrations. Centenary Edition Cloth Net 2/6
BIOGRAPHY OF SIR ISAAC PITMAN. By T. A. REED. Cloth 2/6
THE SHORTHAND WRITER. By T. A. REED. Crown 8vo, cloth 2/6
HISTORY OF SHORTHAND. New Edition. Net 6/-
BRIEFGRAPHY OF SHORTHAND. By Dr. WESTBY-GIBSON. Demy 8vo, cloth 5/-

SHORTHAND PERIODICALS.

PITMAN'S JOURNAL. Every Saturday. Crown 4to, 32 pp., 8d.; by post, 4d. Monthly, in a wrapper, 1/2; by post, 1/4. Each number contains six pages of Shorthand, in the Elementary, Intermediate, and Advanced Styles, with Key. Sent direct from the Publishers to all parts.
 3 months, by post 4s. 4d.
 6 months, " 8s. 8d.
 12 months, " 17s. 4d.

Many back volumes are out of print, but those for recent years can be supplied for 6s. each. Handsome covers for binding the present or past yearly volumes of the *Journal*, 1s. each; by post, 1s. 6d.

PITMAN'S SHORTHAND WEEKLY. Every Saturday. Crown 4to, 12 pp., 2d.; by post, 2½d. Beautifully printed in the Elementary, Intermediate, and Advanced Styles; profusely illustrated, with articles in ordinary print in addition. The terms are: 3 months, by post, 2s. 9d.; 6 months, by post, 5s. 5d.; 12 months, by post, 10s. 10d. Half-yearly vols. at Christmas and Midsummer, in handsome green-and-gold binding. Vols. 1 to 7, 9, and 19 out of print. Vols. 3, 8, 11-18, 20-50, price 3s. 6d. each. Covers for binding the present and past half-yearly vols. of the *Weekly*, 1s. each; by post, 1s. 4d.

PITMAN'S SHORTHAND BUDGET. The monthly edition of P.S.W., 10d.; by post, 1s.

CATALOGUES.

SIR ISAAC PITMAN & SONS, LTD., will be pleased to send on application any of the following Catalogues—

PITMAN'S SHORTHAND, TYPEWRITING, AND STATIONERY CATALOGUE.

PITMAN'S COMMERCIAL HANDBOOKS. Suitable for use in Evening Schools and Classes, and for Reference in Business Houses.

PITMAN'S EDUCATIONAL BOOKS (Primary).

A CATALOGUE OF GENERAL AND THEOLOGICAL LITERATURE.
A CATALOGUE OF SCIENTIFIC AND TECHNICAL WORKS.

$$\frac{15}{2} - 400.$$

D

$$1 \quad \frac{400}{\frac{15}{2}} = 400 \times \frac{2}{15}$$

$$= \frac{160}{\frac{15}{2}} = 53\frac{1}{3}$$

57 1/2 wags - Mar 21/28

N.L.C. - B.N.C.



3 3286 02766428 9

Pitman's Shorthand Instructor

(Centenary Edition)

A new and complete Exposition of Sir Isaac Pitman's System of Phonography. Designed for Class or Self-Instruction. With over 150 Reading and Writing Exercises, together with Summaries of the Rules.

Bound in cloth. Price 4s.

Key to the "Instructor" (Centenary Edition)

Containing a Key to all the Exercises.

Price 1s. 6d.; cloth, 2s.

Pitman's Shorthand Manual

Containing Instruction in the Rules of Pitman's Shorthand, with 100 Reading and Writing Exercises.

Price 2s.; cloth, 2s. 6d.

Key to the "Manual"

Price 8d.

Pitman's Shorthand Reporter

An adaptation of Phonography to Verbatim Reporting, and forming the second part of the *Instructor*.

Price 2s. 6d.; cloth, 3s.

Key to the "Reporter"

Price 8d.

LONDON

SIR ISAAC PITMAN & SONS, LTD., 1 AMEN CORNER, E.C.4

BATH, NEW YORK AND MELBOURNE